

*INVENTOR'S
MANUAL.*

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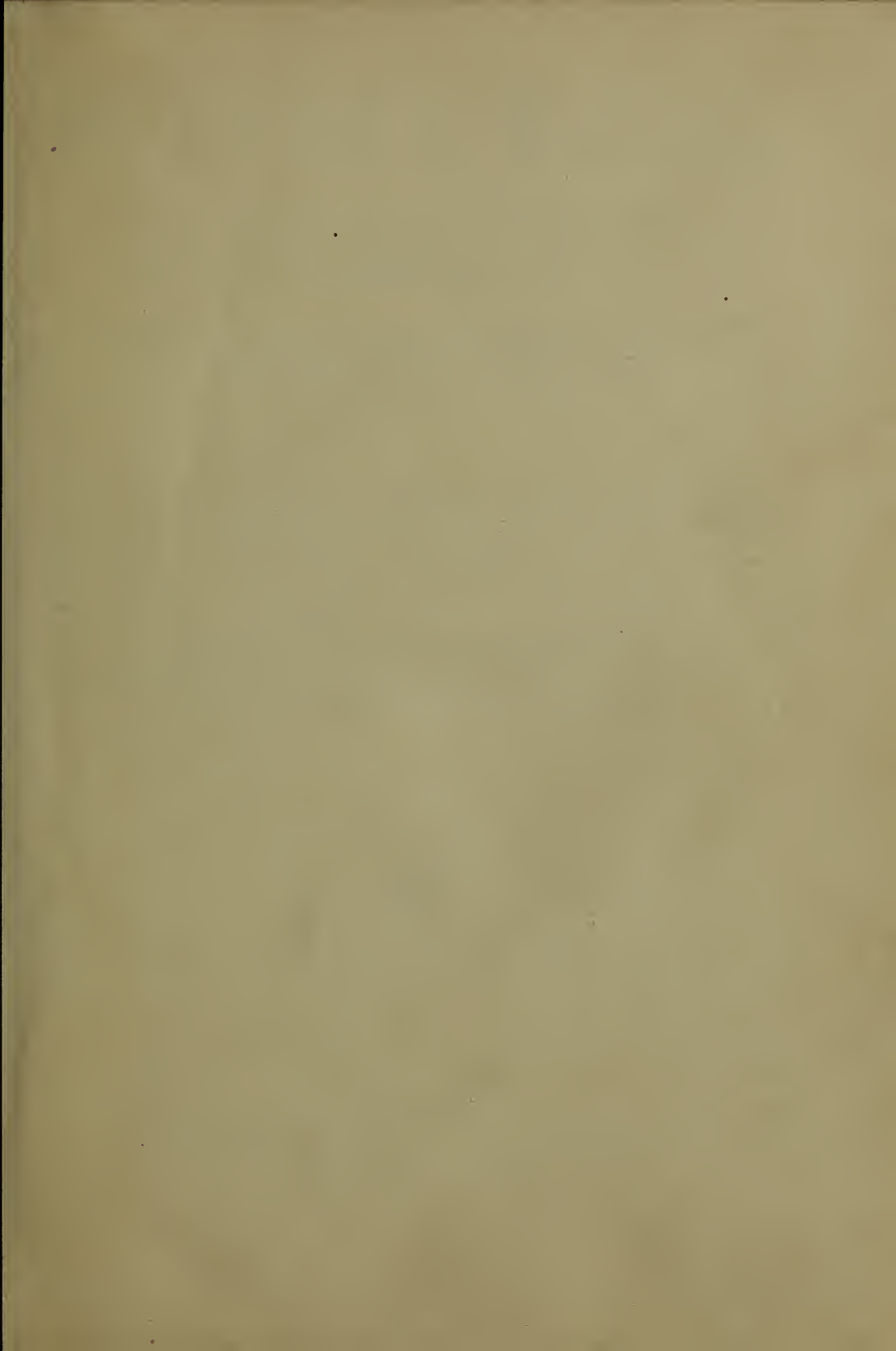


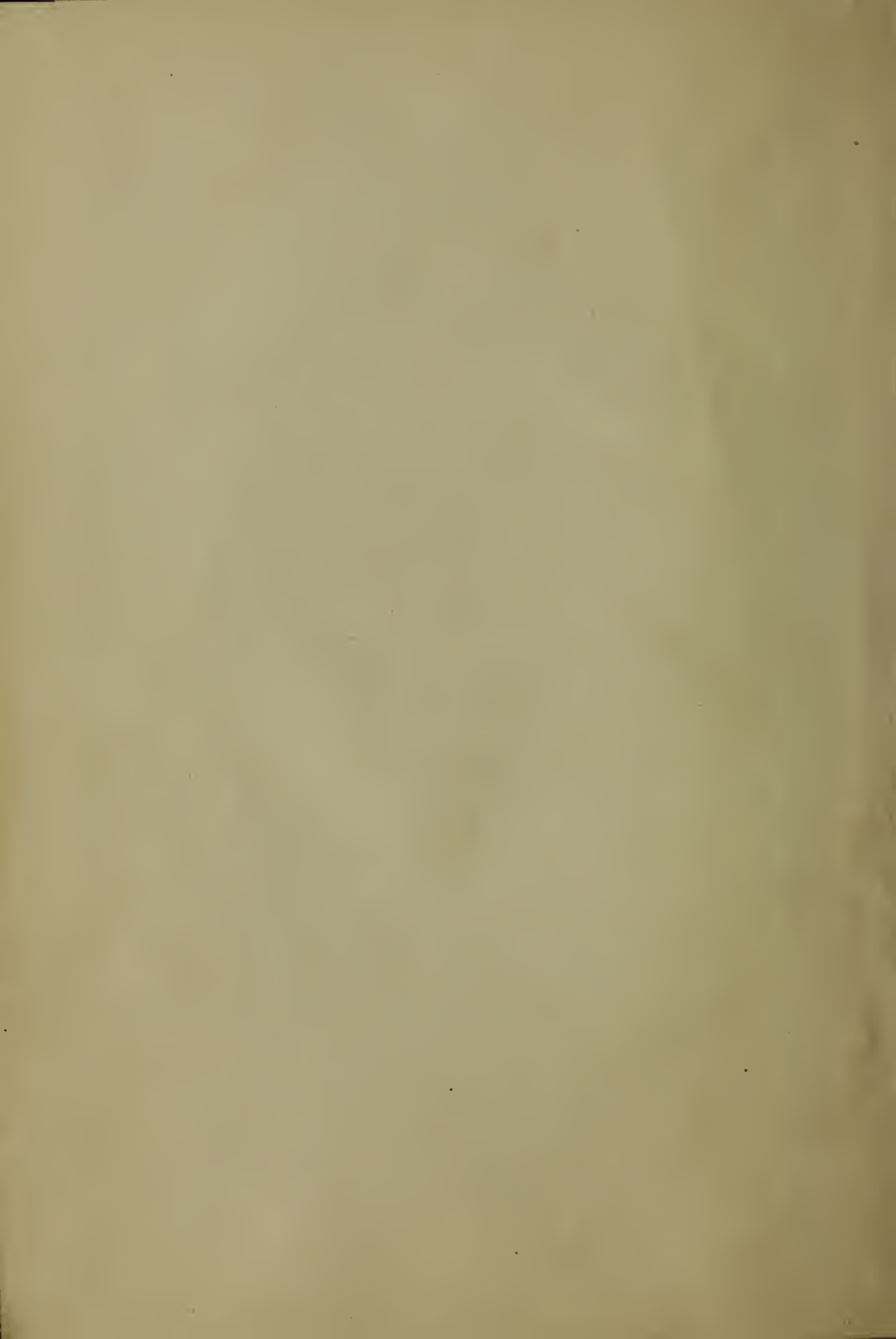
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INVENTOR'S MANUAL

HOW TO WORK A PATENT TO MAKE IT PAY

A Guide to Inventors, in Perfecting their Inventions, taking
out their Patents, and Disposing of Them

BY

AN EXPERIENCED AND SUCCESSFUL INVENTOR

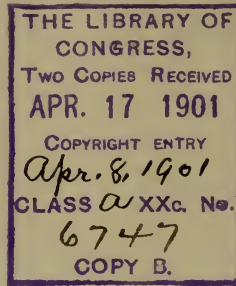
Hopkins, George Milton

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PREFACE.

THE object of the present work is to give the inventor and patentee some hints on patents generally, together with information on ways of exhibiting inventions, bringing them to public notice, and effecting sales. It may as well be understood at the outset that no specific directions can be given for prosecution in any particular case. Each patent requires special treatment, so that beyond the general information here given, ordinary business rules and customs must form the guide to the inventor or his agent. The writer has taken out a large number of patents, some of which have proved very lucrative, while others have paid nothing. The principles herein laid down are those upon which success has been secured. Where attempt to dispose of a patent has failed, it has generally been from one of two causes: Either the invention proved to be something which did not supply a real want, or else it was one of those slight improvements upon an existing invention which necessitated narrow claims which were of little value.

The writer in his early experience had only a slight appreciation of inventors as a class, and acquired the erroneous idea that when one makes an invention, it

must necessarily be novel because it is original, and that it must be profitable because it is novel. Now a prolific inventor soon learns that there are other thoughtful minds beside his own, and very many of them, and that if he would secure something of value in the way of invention he must be alert.

Inventors as a class are apt to take too much for granted; as a consequence, they often waste a great deal of energy in devising something—which may be new to them, but which proves to be “as old as the hills” when the application is made. This fact was early learned by the writer, and it led him to ascertain what others had done in a given line before spending much time or labor on an invention.

Honesty is an element of success in invention. The inventor must first of all be honest with himself. This will enable him to see just how he and his invention stand before the business world. He must be honest with those with whom he deals, otherwise he can never rest secure in the rewards of his invention.

The reader will naturally inquire why the author does not disclose his identity. The principal reason is, that if he were to do so, he would be overwhelmed with applications for further advice, and for assistance in selling patents. He has not a moment to devote to these matters. He is in sympathy, however, with every honest, hard-working inventor, and wishes him well.

THE AUTHOR.

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INVENTOR'S MANUAL.

THE FACULTY OF INVENTING.

THIS faculty as popularly understood is possessed to a greater or less degree by every one, and is constantly active in the daily routine of life. Inventing, as the dictionary has it, is "contriving that which did not before exist," but it cannot be claimed that man has creative power, nor can he do otherwise than make use of what already exists in the great storehouse of nature. The fundamental principles and the materials in which to embody these principles are all there, and available to one possessing sufficient acumen to see them.

The obtuseness and blindness of men are never more fully realized than when some inventor with more penetration than his fellows sees an opportunity for invention, invents, and acquires wealth by bringing into existence some simple contrivance that is immediately adopted and asserts itself as a necessity, when everybody says, "Why didn't some one think of that before?"

It all seems easy enough and natural enough after

it is done, and it *is* a wonder why it was not done before. The trouble is just here—inventors, and many who might be inventors, do not school themselves to systematic observation. They should have eyes in all directions; they should let no observed phenomena go uninvestigated; they should revolve every subject so as to see its bearings on everything relating to it. No machine, no process, no tool, coming under the observation of the inventor should be allowed to pass without raising such questions as these: Can this device be made to yield better results than it does now? Can it be made to do its work quicker and cheaper than it does now? Can its construction be simplified or cheapened? Can power be economized? Can something else simpler and cheaper be devised for the same purpose? A real inventor never tires, and he not only scrutinizes the inventions of others, but treats his own in like manner. His object is to improve wherever an opportunity presents itself, and to secure to himself the benefits of such improvements.

It is a curious fact that although nature has always shown that molecules of water fly from each other with great force when subjected to heat, this force was not fully utilized until the days of Watt. Nearly all of the great inventions of modern times have substantially the same history as that of the steam engine. The principles and the materials existed, but centuries were required to develop the inventions.

A future of vast possibilities lies before the inventor of to-day, and with energy, perseverance, and a cultivated faculty of inventing, great prizes are within his reach. He must avoid ruts and well-beaten paths and strike out in a new direction. It is one thing to say this, but quite another thing to do it. It is being done, however, and almost every day we hear of some inventor who has acquired wealth, and in some cases, honor also, in a very brief time.

INVENTOR AND INVENTION.

It seems superfluous to say that a patent apart from an invention is of no value, but many inventors have the impression that if an invention possesses patentability, it must also necessarily have pecuniary value. This is probably the greatest mistake made by the majority of inventors. To be of any value whatever, the invention must cover something for which there is a demand, or for which a demand can be created. It may be an entirely new device, or it may be an improvement upon an existing invention; in any event it must have a certain degree of utility. There are two general classes into which inventions may be divided; first, those having comparatively few applications and requiring great capital for their promotion; such for example as the Bessemer Steel Process, the Westinghouse Air Brake, or the Electric Light; and second, those which find use in every family and by almost every person, such as the shoe-lace hook, the various buttons and buckles, the rubber-tipped pencil, etc. Of these two classes the latter has proved to be by far the most popular and profitable. An inventor who can convince the people of the United States that he has an article that is worth more to

them than the price asked for it, even if he should only make a profit of a mill upon each article, the invention would net him a large fortune.

The first thing to be done, therefore, is to invent something that the mass of people want. It is at this point that the inventor is apt to err. He is liable to think that because his invention seems to him practical and desirable, it will appear in the same light to others. Right here the lines of the Scotch Bard seem especially applicable.

“ O, wad some pow’r the giftie gie us
To see oursels as ithers see us !
It wad frae monie a blunder free us,
And foolish notion.

If an inventor is able to forget himself to such an extent as to look upon his invention with unbiased eyes, it may appear in a new light to him. First of all he must be honest with himself. Does his invention appear really valuable in his own estimation? If this question is settled in the affirmative, the next question will be, is he alone in the field of his particular invention, or has he a thousand competitors? An invention that is obvious to every one is of no particular value to any one. An invention of this class is only such in name, and may be regarded as a mere piece of good judgment involving no invention whatever.

The thing for the inventor to do is to make a new departure; leave the old grooves and strike out for

something new. But how is he to do this? Certainly not by following the suggestions of others, particularly those who furnish lists of "inventions wanted," for the reason that when the fact is known that a certain invention is wanted, the most valuable point in the invention is gained. A suggestion upon which the inventor can base his invention is often worth thousands of dollars. It cannot, therefore, be supposed that any one will furnish such suggestions gratis, or for a mere nominal sum.

A certain class of people who think themselves to be inventors say, "if some one would tell us what is needed we would invent it," forgetting that the principal secret of invention is to find out this very thing. The very word "invention" means the calling into existence of something not before known.

Now, as to the method of invention, little can be said. The habit of observation is of the greatest importance to the inventor. By observation he catches ideas which will lead to invention. By the exercise of this faculty the inventor sees wherein the existing methods and machines are defective, and thus discovers opportunities for new methods and new machines.

It is seldom that an inventor hits upon an entirely new idea; occasionally, however, he is able to do this. It is generally by continued investigation and really hard work that an entirely new and valuable invention

is made. The valuable inventions or discoveries made by accident are very few. The vulcanization of rubber, the art of lithography, and the principle of the turbine are said to have been discovered by accident, but these are rare examples.

AS TO THE PATENT.

HAVING made an invention, the next important step is to protect it as completely as possible. The Patent Laws of the United States, and the Official Rules of the Patent Office, are all favorable to the thorough protection of an invention. If an invention is not entirely new, it must necessarily be subservient to existing patents, or its scope will be limited by expired patents or by devices that have been in public use or on sale for more than two years prior to the invention. If an invention is new, the inventor is entitled to very broad claims, and his specification should be ample and of such a nature that a man skilled in the art to which the invention appertains may gain from the drawing and specification, such knowledge of the invention as will enable him to construct and operate the machine or apparatus, if it be a mechanical invention, or to carry out the method if it be a patent for a way of accomplishing a certain result, or to carry out the process if it be an application for a patent for a process, or to form a composition of matter if the invention belongs to that class.

A patent which fails to give this information is of no value. In every case the claims should be as broad

as is consistent with the state of the art to which the invention appertains. If the invention is entirely new, each portion thereof which has any function should be claimed separately, in clear, concise terms, so that no possible doubt can exist as to the meaning of the claim. In addition to this, the parts may be claimed in combination, introducing only so many elements into each claim as are required to form an operative combination, for it must be understood that if the results can be secured by fewer elements than are included in the claim, the person who thus utilizes several of the elements, omitting others, does not infringe the claim.

In attempting to realize from a patent very much depends upon the character of the specification and claims. As a rule, it is not advisable for the inventor to prepare his own application for a patent, for while he may thoroughly understand his invention, it cannot be supposed that he is informed on the intricacies of the Patent Law, and the peculiarities of the workings of the Patent Office, and the chances are that an inventor who attempts to secure his own patent will either absolutely fail, or secure a patent which is utterly worthless. The case is nearly as bad when the invention is intrusted to an attorney who is incompetent and inexperienced in the practice of the Patent Law, or in practice before the Patent Office; and it is equally as bad if the attorney has not a mechanical or scientific mind which will enable him to

comprehend the invention, and to draw a specification which will describe the invention in such terms as to leave no doubt as to the meaning of the inventor and the character of his invention. It also requires a peculiar mind to frame claims which are adequate to protect an invention. It is, therefore, advisable to intrust the business of procuring a patent to a responsible and competent attorney, and the question of fees should be the last one raised, if the inventor really believes he has a valuable invention.

If the inventor has an invention which is but an improvement on some previous invention, or if it consists merely in a combination of old, well-known devices, which accomplishes a new result, he is entitled to a patent, but his patent will be necessarily limited by the fact that the novelty consists merely in the combination, which in many cases may be broken and something equally as good may be produced by another combination. Frequently the attorney is blamed for introducing claims covering too many elements, when in reality such claims are the only ones that could be obtained. It is unfair, not to say unjust to the attorney, to judge of a patent by merely examining the claims without reference to the action of the Patent Office in the case. No just conclusion can be arrived at without first examining the file at the Patent Office containing memoranda of all the actions in the case.

APPLICANTS.

“A PATENT may be obtained by any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof, not known or used by others in this country, and not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof, and not in public use or on sale for more than two years prior to his application, unless the same is proved to have been abandoned; and by any person who, by his own industry, genius, efforts, and expense, has invented and produced any new and original design for a manufacture, bust, statue, alto-relievo, or bas-relief; any new and original design for the printing of woollen, silk, cotton, or other fabrics; any new and original impression, ornament, pattern, print, or picture to be printed, painted, cast, or otherwise placed on or worked into any article of manufacture; or any new, useful, and original shape or configuration of any article of manufacture, the same not having been known nor used by others before his invention or production thereof, nor patented nor described in any printed publication.

“If it appear that the inventor, at the time of making his application, believed himself to be the first inventor or discoverer, a patent will not be refused on account of the invention or discovery, or any part thereof, having been known or used in any foreign country before his invention or discovery thereof, if it had not been before patented or described in any printed publication.

“Joint inventors are entitled to a joint patent, neither can claim one separately. Independent inventors of distinct and independent improvements in the same machine cannot obtain a joint patent for their separate inventions; nor does the fact that one furnishes the capital and another makes the invention entitle them to make application as joint inventors; but in such case they may become joint patentees.

“The receipt of letters patent from a foreign government will not prevent the inventor from obtaining a patent in the United States unless the invention shall have been introduced into public use in the United States more than two years prior to the application. But every patent granted for an invention which has been previously patented by the same inventor in a foreign country will be so limited as to expire at the same time with the foreign patent, or if there be more than one, at the same time with the one having the shortest unexpired term; but in no case will it be in force more than seventeen years.”

CAVEATS AND RECORDS OF INVENTION.

A CAVEAT, under the patent law, is a notice given to the office of the caveator's claim as inventor, in order to prevent the grant of a patent to another for the same alleged invention upon an application filed during the life of the caveat without notice to the caveator.

Any citizen of the United States who has made a new invention or discovery, and desires further time to mature the same, may file in the Patent Office a caveat setting forth the object and the distinguishing characteristics of the invention, and praying protection of his right until he shall have matured his invention. The caveat is filed in the confidential archives of the Patent Office and preserved in secrecy, and is operative for the term of one year from the filing thereof.

An alien has the same privilege, if he has resided in the United States one year next preceding the filing of his caveat, and has made oath of his intention to become a citizen.

The caveat must comprise a specification, oath, and, when the nature of the case admits of it, a drawing, and, like the application, must be limited to a single invention or improvement.

A caveat may be renewed from year to year.

Many inventors have the erroneous idea that a caveat is of the same nature as a patent, and that the protection afforded is the same as that of a patent, but for a shorter period. The fact is, a caveat simply prevents another inventor from gaining an advantage over the caveator. A caveat is very useful when the invention is complicated, as it enables the inventor to work on his invention year after year until it is completed, while he knows that no patent can issue to another without his receiving a three months' notice, thus giving him the necessary time for the completion of his invention and the application for a patent. When an invention is complete, it is desirable to secure a patent as early as practicable.

Some of the prominent inventors keep an accurate record of their progress in the development of an invention, illustrating it with sketches, signing it and dating it with each new addition, and where practicable having it witnessed by two or more witnesses. This plan is preferred by many to filing a caveat. Such a record is certainly very important in the case of an interference, as it enables the inventor to fix the dates of the various steps in his invention beyond a question. It is a sort of evidence that cannot be impeached. Such a record often proves of great value in effecting sales and in fixing the price of a patent, as it shows the amount of labor involved in bringing the invention to a perfected state.

Of course these remarks do not apply to every invention. A small invention which appears in its perfect and final shape on its conception in the inventor's mind, would require only such memoranda as would fix the date of the first conception and of reducing the invention to practical form. This record would be useful only in an interference.

THE DEVELOPMENT OF THE INVENTION.

AN inventor who has ample means can proceed with the necessary experiments, construct machinery and apparatus, inform himself as to the state of the art and file his application for a patent without consulting his friends or making his invention known except to his attorney and the Patent Office. Such an inventor has the advantage over one of limited means, not only in this respect, but in promoting the invention after the patent is issued. A poor inventor can seldom afford to run the risks incident to applying for patents, since in the first place he is not certain of success in obtaining a patent, and in the second place, if he succeeds in securing a patent it may have no value, or even if it has real merit, it may be impossible for him to promote it by the means at his command. He is therefore, tempted to part with a small interest in his invention for the sake of securing the necessary funds for the preliminary experiments, for the patent, and for the construction and operation of the machine, if the invention is for a machine, or for the development of a process, if the invention belongs to that class.

An inventor in this predicament is apt to make a fatal mistake by assigning to another an undivided

interest in his invention. Such an assignment appears fair enough on the face of it, as it would seem that the proceeds of the patent should, under such an assignment, be divided according to the several interests *pro rata*. This would be an equitable division of the profits, but in this kind of an assignment an opportunity is offered to the assignee of manufacturing, using, and selling to others to be used, the articles covered by the patent, also to grant territorial rights, such grants being unlimited by the terms of the assignment, and it matters little how small the interest conveyed by such an assignment, the assignee can proceed with the patent in much the same way as if he were the sole owner. The inventor cannot bring an action in the civil court against the assignee for an accounting, neither can he affect the actions of those having territorial grants under the patent, or licenses to manufacture.

It will thus be seen that the assignee of an undivided interest has a decided advantage over the inventor, if he is inclined to be dishonorable. It may be safely stated that a large proportion of inventors have virtually lost their inventions by making an assignment of an undivided interest. It is, therefore, not advisable to make such an assignment unless the assignee is worthy of the utmost confidence.

A better way to secure the means for the development, patenting, and the introduction of the invention

is to enter into contract with the party furnishing the means, the terms of which secure to the party a certain proportion of the proceeds of the invention, and at the same time guarantee the inventor sufficient means to carry out his invention. As a rule, it is not difficult to find men who are willing to invest the amount necessary to develop and patent an invention, for a small percentage of the proceeds of the manufacture and sale, or of territorial grants. Generally the inventor can find those among his acquaintances who are willing to do this. In any case, whatever is agreed upon should be in the form of a contract, couched in such terms as to leave no doubt as to the understanding between the parties.

A form for such a contract is given below:

AGREEMENT PRIOR TO APPLICATION FOR PATENT.

Whereas I, _____, of _____, County of _____ and State of _____, have invented a new and useful improvement in _____, for which I am about to apply for Letters Patent of the United States, and whereas _____, of _____, is desirous of obtaining an interest in the net profits arising from the sale or working of the said invention under such Letters Patent of the United States as may hereafter be granted:

NOW THIS INDENTURE WITNESSETH, that for and in consideration of one dollar paid by each of the parties

hereto to the other, the receipt of which is hereby acknowledged, it is stipulated and agreed as follows: First, that the said ———, shall pay all moneys necessary to the construction of a suitable model to represent the said invention; that he shall pay all expenses necessarily incurred in procuring Letters Patent of the United States; that he shall pay all necessary expenses incurred in the construction of a working machine (or in carrying out the process); that he shall make diligent effort to promote the invention, its manufacture and sale; Second, that the said ———, inventor of the said ——— in consideration of the payment of the moneys above mentioned, agrees to pay to the said ———, 25 per cent of all net receipts in any manner arising from the sale or working of the said patent during the term for which the said patent may be granted.

Witness our hands and seals this ——— day of ———, A. D. 18—.

————— (Seal)

In presence of

—————

REVERSION OF A PATENT.

It is common to have a contract between the patentee and the manufacturer, with conditions for the reversion of the patent or privilege granted under the patent

in case the manufacturer should fail to comply with the contract. If a party obtains an assignment of a patent under a contract which binds him to use diligence in the prosecution of the manufacture or sale, and to use money in the introduction and promotion of the patent or patented article, a failure to do anything on the part of the assignee or to use due diligence, the inventor may by due process of law set aside the contract and recover his patent.

FRAUD IN THE SALE OF A PATENT.

When a patented machine is sold under false representations and the capacity of the machine or the value of the process is grossly overestimated, or if the patent appears to be inoperative or valueless, the sale may be set aside by the buyer, and when a note is given for the purchase of a patent right, if the patent is void and the invention of no value, the note given for such invention is void as between the parties.

THE EXHIBIT OF THE INVENTION.

MANY inventors after they have conceived an invention are in such haste to get it into some kind of presentable shape that they proceed without due regard to the perfection of detail. Such inventors frequently get patents for inventions which are so crude and primitive as to be entirely worthless, and even after the patent is obtained, they fail to perfect their invention before submitting it to promoters or capitalists. As a consequence, the first exhibit of the invention is merely a chapter of mistakes and excuses. Certain portions of the device have not been quite perfected, and this or that needs to be done to accomplish the desired results.

This may seem well enough to the sanguine inventor, but such procedure as this is fatal to the success of the invention. It must be remembered that those who furnish capital for the promotion of the invention, and those who assist inventors in placing their inventions on a business basis, are, as a rule, neither mechanical nor scientific, and can, therefore, make no allowance for imperfections or mistakes.

The inventor, if he can avoid it, should never exhibit to any one an imperfect model, machine, or process.

It is better to even spend a year or so in the perfection of an invention than to exhibit something that is so imperfect as to require a multitude of excuses and promises as to future improvements. First impressions are all-important; therefore the inventor should prepare such models and exhibits of his invention as will present it in the best possible shape. There must be no mistake about its performance if it be a machine, a piece of apparatus, or a process. The writer knows of cases in which the very best of opportunities were lost by failing to act in accordance with these simple common-sense observations.

INVENTIONS OF WOMEN.

It is only within a few years that many women have turned their attention to the subject of patents, and even now the proportion of patents taken out by women is very small indeed; but there is no reason why it should not be much larger. In household matters women have an opportunity to see chances for invention which would entirely escape the attention of men, and they frequently do make inventions which are put into practical use without realizing that they are patentable and might yield a handsome income. It may be safely said that the proportion of successful patents taken out by women exceeds the proportion of successful patents taken out by men. There would, therefore, seem to be every encouragement for women in the line of invention.

It is unnecessary for women to go outside of home for subjects for inventions; household utensils, furniture, and ornaments supply a large field for invention; wearing apparel affords many opportunities for invention. Large manufacturers of women's, misses', and children's furnishing goods are always ready to purchase patents covering novelties in their respective lines.

DESIGN PATENTS.

THERE is a class of inventions which seems to have been overlooked by many inventors, but which has proved profitable to others. We refer to the invention of designs. While it is seldom that a design patent brings a very large sum, yet one who is fertile in the invention of designs can turn out a great many patents of this class in the course of a year, which in the aggregate will net a very handsome sum.

This particular branch of invention is one in which women may engage to advantage. In fact, many of them produce designs well worthy of a patent, which are given away, for the reason that the idea of patenting them never enters their mind. By a little effort women who are artistically inclined may produce designs for wall paper, for carpets, jewelry, silver ware, furniture, pottery, glass ware, etc.

Design patents may be taken on parts of machines. Many a machine has met with a ready sale on account of its appropriate or elegant form. Sometimes a machine or piece of apparatus which cannot be protected by a patent for construction might form the subject of a design patent which will afford ample protection. A machine ugly in appearance may be put

into new framework and made to appear like a different machine, and whereas, before its change of design it seemed to be unsalable, the new form catches the eye, and attention being drawn in this way to the machine, a sale is effected.

It will thus be seen that design patents have an indirect as well as a direct value. As a rule design patents must be sold to large manufacturers. They cannot be worked apart from the manufactory. For this reason they are more or less subject to the manufacturer, who may buy them or not, as he pleases, but a really new and elegant design will always find a market.

PATENTS AS THE BASIS OF BUSINESS.

ONE of the legitimate uses of patents is the protection of an industry or monopoly. The man who has invented a really good thing which is likely to be largely in demand, if he consults his own interests will manufacture the article himself, and will thus not only make the inventor's profit, but also the manufacturer's profit, which is quite as important. In this case, if the inventor has not the means wherewith to establish a business on the basis of his patent, he can readily secure a partner, and while he will be obliged to divide the profits with his partner, he will still have the advantage of manufacturing the article with as much profit to himself as he would realize from a royalty, and beside this, he would be the proper person to manage the business of manufacturing, and would therefore be entitled to a salary, which to some extent would offset the proportion of the profits which goes to the partner.

PROFITS FROM INVENTIONS.

It is stated that Mr. Westinghouse has made \$20,000,000 out of the air brake. It was called at first a

"small thing," using air in that way, says the *Iron Industrial Gazette*, but it has panned out well. Other "small things" have rewarded mechanics well. The lead-pencil rubber tip cleared its inventor \$100,000; the metal rivet or eyelet for miners' coat and trousers' pockets brought its inventor a fortune; boot and shoe heel and sole plates of metal cleared \$1,250,000; the glass bell inverted over lamps and gas jets cleared a fortune; the simple plan of fastening powdered emery on cloth made a fortune; the roller skate cleared \$1,000,000 before the craze died out; the gimlet screw realized millions; copper tips for shoes netted millions; the simple needle threader netted \$10,000 a year; toys and playthings have cleared thousands; the ball with the rubber string brought an income of \$50,000 a year; the "Dancing Jim Crow" netted \$75,000 a year; Pharaoh's serpents cleared \$50,000; the "wheel of life" cleared \$50,000; the chameleon top cleared a fortune; the "Pigs in Clover" puzzle has within one year made its inventor a fortune; the pencil sharpener cleared a fortune. Hundreds of "small things" have turned out well. If you have an idea, bring it out and let the busy and inquisitive world see it. The mechanics who have been enriched by little inventions far exceed in number those who have reaped fame and fortune by great inventions. Put on your thinking-cap, and dive into the world of possibilities. The fortune is there if you only know how to find it.

HOW PATENTS PROMOTE TRADE.

"PATENTS and trade go hand in hand. Take away the motive of invention and you destroy an important ally of improvement. It is said that inventors always will invent; that inventions come when they are needed, and common phrase makes them to be, as it were, automatically evolved out of the necessities of business. Inventions do not come merely because they are needed, but because they are needed and will be paid for, and it is only by making them property, and protecting them as property, that they are worth purchase. They are influenced, like other things, by the law of supply and demand; but the law of supply and demand does not operate where there is no inducement to supply, and no payment accompanies the demand. Demand must come with purse in hand, or supply does not respond. The patent system is based upon this fundamental law of political economy. Inventions do not come when and merely because they are called for, as by the stroke of a magician's wand. Long years must perhaps be spent in study and costly experiment. A premium was offered for a steam engine by Charles II., but Watt only produced one under George III. A steam plough has been a desideratum for a generation, but the demand has not yet produced the supply."

MONEY IN INVENTIONS.

“ONE of the best opportunities for a young fellow to make money quickly in these days,” said a self-made millionaire of this city to a writer on the *New York Tribune*, recently, “is to rack his brains until he has invented something useful or that the public wants.” A general impression prevails that it takes a skilled engineer or a man of phenomenal inventive ability to develop anything useful to manufacturers in this age of machinery. But there is a wide field open to shrewd amateurs, so to speak, to supply little articles of convenience to housekeepers, shopkeepers, etc., and designers can be had at reasonable rates to execute the idea, once it is conceived. American women are so accustomed to getting what they want that anything which lightens their labors in the household is sure to “go.” When I was a boy on the farm at home, my mother used to make me clean all the dinner knives on Sunday with bath brick. Now, scraping this brick into a fine powder, without lumps in it, used to be the most tedious part of the whole work. The other day I heard of a man who has made a fortune by supplying the trade with powdered bath brick in neat packages. You know how difficult it is to pick up small coins from a

wooden counter. Yet the whole civilized world has growled at and endured it since coins were stamped and counters made, until the other day a young fellow invented a rubber mat with little bristles of rubber standing up thickly all over it. Coins thrown on the mat are as easily picked up as if they stood on edge. The public was quick to appreciate it, and the inventor need not work for a living any longer.

WEALTH FROM INVENTIONS.

SENATOR PLATT, in his vigorous speech in Congress in support of our Patent Laws, claimed that two-thirds of the aggregate wealth of the United States is due to patented inventions; that two-thirds of the \$43,000,000,000 which represent the aggregate wealth of the United States rests solely upon the inventions, past and present, of this country.

Mullhall, in his "Progress of the World," writes, "that in effect, the invention of machinery has given mankind an accession of power beyond calculation. The United States, for example, make 1,000,000 sewing machines yearly, which can do as much work as formerly required 12,000,000 women working by hand."

A single shoe factory in Massachusetts turns out as many pairs of boots as 30,000 boot makers in Paris.

JOINT OWNERSHIP.

WHERE two parties are joint owners of a patent, neither can sue the other for infringement; and further, neither joint owner can sue the other to compel an ac-

counting of the profits of the manufacture by the other of the patented article.

The decisions bearing on these cases are *Aspinwall vs. Gill*, 32 Fed. Rep. 691; *Vose vs. Sanger*, 4 Allen, 226.

PARTLY EXPIRED PATENTS.

AFTER a patent has run a few years it is generally difficult to realize much from it unless the patentee is able to improve his invention to such an extent as to entitle him to further patents, and while the original patent cannot be prolonged, it frequently happens that the improvements prove to be far more valuable than the original patent and these run the full term of seventeen years.

FOREIGN PATENTS.

MANY Americans who have worthy and valuable inventions do not seem to realize the importance of taking out foreign patents, or if they do they are too easily discouraged by the great expense. It is a well-known fact that many inventions patented both in the United States and Europe, have proved by far the more profitable in Europe. Where the expense of foreign patents is the obstacle, it would seem better to

part with a large proportion of the foreign interests for the sake of securing the patents rather than to fail of getting them.

In almost every community there are moneyed men who are perfectly willing to chance the comparatively small sum required for securing foreign patents, who will take a quarter or a half interest in the invention and furnish the necessary means for securing patents abroad. One precaution is necessary in the taking out of foreign patents, that is, to have the patents filed so as to secure the longest term in each country. Every competent patent solicitor understands how to arrange these matters so as not to jeopardize any of the inventor's interests.

In securing an attorney for preparing and prosecuting foreign patents it is very important to do the business with a house of undoubted standing, so as to insure the prompt payment of the taxes, and thus prevent the expiration of a patent which would otherwise lapse.

ARGENTINE REPUBLIC.

In this country patents are usually taken for ten years. They are also granted for five and fifteen years. The cost of a patent for ten years is about \$300. This covers all the expenses of the patent, as there are no taxes.

AUSTRALIA.

It requires several different patents to cover the colonies of Australasia. There are seven such colonies. The expense is about \$100 each. The term is fourteen years, and working is not required.

AUSTRIA.

It is not necessary that the applicant for a patent in Austria should be the inventor. Any one may apply for the patent.

The average cost for an application for a patent in Austria, when secured through a reputable American house, is \$100. This sum includes the Government taxes and all the expenses for the first year, including the agents' fees.

Austrian patents are granted for fifteen years, subject to annual taxes. Within three years working is required.

The application must be filed before the invention is published in Austria or any other country, or made public anywhere.

BELGIUM.

It costs about \$75 to apply for a patent in Belgium. In this country the first applicant gets the patent. It

may be taken for twenty years. It must be worked within a year of its being worked elsewhere.

BRITISH INDIA.

A patent in this country runs for fourteen years. After four years a yearly tax must be paid. This patent covers British India in its entirety. The cost is generally about \$150.

CANADA.

The Canadian Patent Laws are liberal, and particularly favorable to citizens of the United States.

Patents may be taken for six to twelve, or eighteen years. The application may be for eighteen years, or it may be for the shortest term, six years. It can then be extended for six or twelve years.

The Canadian application must be filed within one year of the date of the United States or other patent.

Assignments may be made as in the United States.

Caveats can be filed in the Canadian Patent Office, and provisional protection for a year may be procured at a nominal expense.

As a rule, any invention that is profitable in the United States is valuable in Canada.

The cost is \$45 for six years, \$85 for eighteen years. These sums include the Government and attorneys' fees.

CHILI.

In Chili a patent costs about \$400. An invention that is entirely new in this country can be patented. Working is required. Taxes are not imposed.

DENMARK.

A patent is granted in Denmark for fifteen years. It costs \$90, and is subject to a yearly tax. Only the inventor can obtain the patent.

Any printed publication will prevent the granting of a valid patent except as provided by the International Convention.

A patent must be worked in Denmark.

FRANCE.

In France a patent can be taken for a term of fifteen years. There is an annual tax which must be paid, to keep the patent in force. The cost is usually \$75, including the first tax.

The first applicant, whether the inventor or introducer, is entitled to the patent.

Patent of addition can be had for improvements. The cost of this is about \$50. The invention must be worked within two years.

The French colonies are all included in a French patent.

GERMANY.

A patent is granted for a term of fifteen years in Germany. It covers all the German States. One hundred dollars usually pays for the patent and the first year's taxes. An invention should be patented in Germany before it is made public there. Annual taxes are required in Germany.

Working within three years is required.

GREAT BRITAIN.

A British provisional patent may be secured for nine months at a cost of \$40, including the Government and agents' fees. The first applicant can obtain it. It makes no difference whether he is the real inventor or merely the introducer. Within the nine months a second fee must be paid to complete the patent. This fee is usually \$35. This makes the completed patent cost \$75. This sum covers the Government and agency fees for four years, after which taxes are required.

A British patent, in addition to England, includes Wales, Scotland, Ireland, and the Isle of Man.

HUNGARY.

The laws of Hungary are not materially different from the laws of Germany. The cost is \$100, and annual taxes are required.

ITALY.

Eighty dollars is an average fee for a patent in Italy. This sum includes all the fees payable during the first year. The term of a patent in Italy is fifteen years. Working is required within two years, and a tax must be paid yearly.

NORWAY.

Ninety dollars usually pays for a patent in Norway. The term of the patent is fifteen years, and working and taxes are required. The real inventor must apply, and the invention must not have been made public in any way.

PORTUGAL.

In this country the patent can be taken for any desired length of time up to fifteen years. There are no taxes.

The fees are so variable for the different lengths of time and for different attorneys that they cannot be stated.

RUSSIA.

The cost of a patent in Russia is \$125. This sum includes the taxes for the first year. The term of a patent is fifteen years. Working is required within five years. The patent includes Poland and Siberia.

SPAIN.

A patent is taken for twenty years in Spain. The real inventor or any one else can apply. There is an annual tax. Eighty dollars pays for the patent, the first tax, and the agents' fees.

SWEDEN.

In this country the patent is obtained on practically the same conditions as in Norway.

SWITZERLAND.

Only the inventor can secure a patent in Switzerland. Fifteen years is the term of the patent, and a tax is payable yearly. The patent must be worked. The cost is about \$100.

OTHER FOREIGN PATENTS.

No patents are granted in Holland. Patents are granted in Brazil, Colombia, Ecuador, Finland, Japan, Luxembourg, Mexico, Paraguay, Peru, South Africa, Turkey, and Venezuela. The inventor had better secure information regarding patents in these countries from his attorney, as in some of them the fees are variable and attorneys differ in the prices charged.

LAWS RELATING TO PATENTS AND PATENT
CAUSES PASSED BY THE FIFTY-
FOURTH CONGRESS.

AN ACT REVISING AND AMENDING THE STATUTES
RELATING TO PATENTS.

BE IT ENACTED BY THE SENATE AND HOUSE OF REPRESENTATIVES OF THE UNITED STATES OF AMERICA IN CONGRESS ASSEMBLED, That section forty-eight hundred and eighty-six of the Revised Statutes be, and the same hereby is, amended by inserting on line four, after the word "country," the words "before his invention or discovery thereof," and on line five, after the word "thereof," the words "or more than two years prior to his application," so that the clause so amended will read as follows :

"SECTION 4886. Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvements thereof, not known or used by others in this country, before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof, or more than two years prior to his application, and not in public use or on sale in this

country for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon payment of the fees required by law, and other due proceeding had, obtain a patent therefor."

SECTION 2. That section forty-nine hundred and twenty of the Revised Statutes be, and the same hereby is, amended by adding to the third clause of said section after "thereof" and before "or" the following words: "or more than two years prior to his application for a patent therefor," so that the section so amended will read as follows:

"SECTION 4920. In any action for infringement the defendant may plead the general issue, and, having given notice in writing to the plaintiff or his attorney thirty days before, may prove on trial any one or more of the following special matters:

"First, That for the purpose of deceiving the public the description and specification filed by the patentee in the Patent Office was made to contain less than the whole truth relative to his invention or discovery, or more than is necessary to produce the desired effect; or,

"Second, That he had surreptitiously or unjustly obtained the patent for that which was in fact invented by another, who was using reasonable diligence in adapting and perfecting the same; or,

"Third, That it has been patented or described in

some printed publication prior to his supposed invention or discovery thereof, or more than two years prior to his application for a patent therefor; or,

“Fourth, That he was not the original and first inventor or discoverer of any material and substantial part of the thing patented; or,

“Fifth, That it had been in public use or on sale in this country for more than two years before his application for a patent, or had been abandoned to the public.

“And in notices as to proof of previous intention, knowledge, or use of the thing patented, the defendant shall state the names of the patentees and the dates of their patents, and when granted, and the names and residences of the persons alleged to have invented or to have had the prior knowledge of the thing patented, and where and by whom it had been used; and if any one or more of the special matters alleged shall be found for the defendant, judgment shall be rendered for him with costs. And the like defenses may be pleaded in any suit in equity for relief against an alleged infringement; and proofs of the same may be given upon like notice in the answer of the defendant, and with the like effect.”

SECTION 3. That section forty-eight hundred and eighty-seven of the Revised Statutes be, and the same hereby is, amended by inserting on line one, after the words “no person,” the words “otherwise entitled

thereto," and on line three, after the words "caused to be patented," the words "by the inventor or his legal representatives or assigns," and by erasing therein all that portion of the section which follows the words "in a foreign country," on lines three and four, and substituting in lieu thereof the following : "unless the application for said foreign patent was filed more than seven months prior to the filing of the application in this country, in which case no patent shall be granted in this country," so that the section so amended will read as follows :

"SECTION 4887. No person otherwise entitled thereto shall be debarred from receiving a patent for his invention or discovery, nor shall any patent be declared invalid, by reason of its having been first patented or caused to be patented by the inventor or his legal representatives or assigns in a foreign country, unless the application for said foreign patent was filed more than seven months prior to the filing of the application in this country, in which case no patent shall be granted in this country."

SECTION 4. That section forty-eight hundred and ninety-four of the Revised Statutes be, and the same hereby is, amended by striking out the words "two years" in every place where they occur and substituting in lieu thereof the words "one year," so that the section so amended will read as follows :

"SECTION 4894. All applications for patents shall be completed and prepared for examination within one year after the filing of the application, and in default thereof, or upon failure of the applicant to prosecute the same within one year after any action therein, of which notice shall have been given to the applicant, they shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable."

SECTION 5. That section forty-eight hundred and ninety-eight of the Revised Statutes be, and the same hereby is, amended by adding thereto the following sentence:

"If any such assignment, grant, or conveyance of any patent shall be acknowledged before any notary public of the several States or Territories or the District of Columbia, or any commissioner of the United States circuit court, or before any secretary of legation or consular officer authorized to administer oaths or perform notarial acts under section seventeen hundred and fifty of the Revised Statutes, the certificate of such acknowledgment, under the hand and official seal of such notary or other officer, shall be prima facie evidence of the execution of such assignment, grant, or conveyance, so that the section so amended will read as follows:

"SECTION 4898. Every patent or any interest therein

shall be assignable in law by an instrument in writing, and the patentee or his assigns or legal representatives may in like manner grant and convey an exclusive right under his patent to the whole or any specified part of the United States. An assignment, grant, or conveyance shall be void as against any subsequent purchaser for mortgagee or a valuable consideration, without notice, unless it is recorded in the Patent Office within three months from the date thereof.

• “If any such assignment, grant, or conveyance of any patent shall be acknowledged before any notary public of the several States or Territories or the District of Columbia, or any commissioner of the United States circuit court, or before any secretary of legation or consular officer authorized to administer oaths or perform notarial acts under section seventeen hundred and fifty of the Revised Statutes, the certificate of such acknowledgment, under the hand and official seal of such notary or other officer, shall be *prima facie* evidence of the execution of such assignment, grant, or conveyance.”

SECTION 6. That section forty-nine hundred and twenty-one of the Revised Statutes be, and the same hereby is, amended by adding thereto the following sentence:

“But in any suit or action brought for the infringement of any patent there shall be no recovery of profits or damages for any infringement committed more than

six years before the filing of the bill of complaint or the issuing of the writ in such suit or action, and this provision shall apply to existing causes of action," so that the section so amended will read as follows:

"SECTION 4921. The several courts vested with jurisdiction of cases arising under the patent laws shall have power to grant injunctions according to the course and principles of courts of equity, to prevent the violation of any right secured by patent, on such terms as the court may deem reasonable; and upon a decree being rendered in any such case for an infringement the complainant shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained thereby; and the court shall assess the same or cause the same to be assessed under its direction. And the court shall have the same power to increase such damages, in its discretion, as is given to increase the damages found by verdicts in actions in the nature of actions of trespass upon the case.

"But in any suit or action brought for the infringement of any patent there shall be no recovery of profits or damages for any infringement committed more than six years before the filing of the bill of complaint or the issuing of the writ in such suit or action, and this provision shall apply to existing causes of action."

SECTION 7. That in every case where the head of any

Department of the Government shall request the Commissioner of Patents to expedite the consideration of an application for a patent, it shall be the duty of such head of a Department to be represented before the Commissioner in order to prevent the improper issue of a patent.

SECTION 8. That this Act shall take effect January first, eighteen hundred and ninety-eight, and sections one, two, three, and four, amending sections forty-eight hundred and eighty-six, forty-nine hundred and twenty, forty-eight hundred and eighty-seven, and forty-eight hundred and ninety-four of the Revised Statutes, shall not apply to any patent granted prior to said date, nor to any application filed prior to said date, nor to any patent granted on such an application.

Approved, March 3, 1897.

THE VALUE OF NEWSPAPER NOTORIETY.

SOME well-known inventors have acquired the art of interesting the newspapers in their inventions to the extent of getting an enormous amount of free advertising. An invention possessing sufficient novelty to form an item of interest for the newspapers is pretty certain to bring large returns. Such items attract the notice of capitalists and put the invention at once in a favorable position before the public. By following the advice given on another page as to the exhibition of an invention, the inventor will experience no difficulty in gaining the attention of the press, providing his invention possesses merit. The newspapers want news of all sorts and readers are usually interested in inventions, so that when an invention gets into the newspapers it is thoroughly advertised all over the country. It is thus brought to the notice of a large number of people, some of whom are likely to want it. If the invention is of such a character as to strike newspaper men unfavorably, the advertising columns may be resorted to. Often an advertisement in a paper of good standing brings about the desired result. In choosing a paper in which to advertise it is advisable to select a paper which is in some way related to the

industry to which the patent appertains. The judicious wording of an advertisement of this kind has much to do with its effectiveness. The statements should be assuring and at the same time truthful. Any deception in an advertisement is sure to work harm. If the invention will not stand honest treatment, it is useless to waste time and money upon it.

A TALE WITH A MORAL.

A short time since, while the writer was lunching in one of the restaurants of New York City, two gentlemen occupying seats on the opposite side of the table entered into a conversation in regard to inventions and patents. Both appeared to be manufacturers in the same line. One had been for some time trying to purchase a patent of an inventor whom he supposed to be impecunious, but for some reason, not given, the inventor was able to resist the offers of the manufacturer. The other party described a visit of the same inventor to his manufactory. He said that he entertained him for several days, and during the time, by careful questioning, learned that the inventor was in sore need of money. He therefore made a series of propositions which he said ended in the purchase of an invention worth thousands of dollars for the meagre sum of \$500.

This incident serves to show how willing many capitalists are to take advantage of inventors who are in straitened circumstances.

The moral of this story would seem to be this:—if you have an invention to sell, never let it be known that you are in want.

ANOTHER TALE, SAME MORAL.

AN inventor, an acquaintance of the writer, produced an invention in which there were enormous possibilities, but no show of immediate value. He was approached by wealthy and influential friends and was sounded as to his financial condition in every imaginable way, as in the case just mentioned, but his circumstances were such that he was able to live in comfortable style, and, moreover, he had the ability of keeping his mouth shut. He manifested no impatience, seemed to be in no hurry whatever in regard to the sale of his patent, and to all appearance was totally indifferent as to whether it would ever be disposed of. The invention was of such a nature as would allow of its being shown in a private dwelling. Our inventor, therefore, though already living in a well-furnished house, purchased new furniture and fittings, arranged his invention for exhibition, and in due season invited in the capitalists. The house presented evidence of prosperity and even of independence. It therefore became evident from this and other indications that the inventor was in no condition to be "squeezed." They therefore devoted their entire attention during the evening to the examination of the invention, and upon the day following the sale of the patent was made, and a handsome sum was realized by the inventor.

TERRITORIAL GRANTS.

IN years past a great deal of money has been made by selling town, county, and State rights for the manufacture of certain patented articles. This is a legitimate way of realizing from a patent, providing the article is of value and is properly protected; but these territorial sales have been conducted in such a manner as to bring the whole system of selling patent rights into disrepute, so that it is at present a difficult matter to sell a patent in this way. Occasionally, however, a meritorious thing may be thus disposed of to great advantage.

In selling Territorial rights it is a mistake to begin with small places with the idea of working the business up and effecting larger sales on the basis of the smaller ones. The place to begin the sale of Territorial rights is in the large cities, for here is where the capital is concentrated, and it is a well-known fact that in New York, Boston, Philadelphia, Chicago, Cincinnati, St. Louis, and other larger cities, millions of capital are waiting for paying investment. An entire patent for a good thing may be sold in any one of these large cities.

It is possible that the sum realized from the sale of

the entire patent to one party may not be quite as great as could be realized by canvassing the entire country, but the time and money expended in such a canvass will consume much of the profits, and beside this there is another objection to disposing of the rights piecemeal; that is, in the time elapsing between the beginning of the business and the finish, some inventor receiving a suggestion from the invention being sold, may take out a patent for a different device for the same purpose and so defeat the original inventor. This has frequently happened. Therefore it is advisable to dispose of a patent as soon as possible after its issue. If the device is of such a nature that it cannot be sold in this way, *i.e.*, in its entirety, it is nevertheless advisable to begin in the larger places and work toward the smaller ones, for after having made a large sale it is comparatively easy to sell the remnants of the territory.

As to the details of the business of selling little can be said because the procedure will be different in each case. In general, however, we may say as before, that the inventor must put the invention in the best possible shape. He must exhibit it under the most favorable circumstances. The surroundings must not indicate any lack of means. The inventor himself, or his agent, or both, must have a business-like appearance. They must be able to promptly reject offers that are too low, but must be ready to promptly accept offers

that are reasonable. Fortunes have been lost to inventors by refusing to accept an amount which, although not equal to the estimated value of the invention, might be considered as a very fair price.

After disposing of the more valuable portions of the territory, the inventor should proceed to the sale of the balance and continue until he arrives at the point where sales cease to be profitable.

SELLING AGENTS.

ANY inventor who has ever taken out a patent is well aware of the fact that there are dozens, if not hundreds, of men who are perfectly willing to take his invention and advertise it for him and sell it, providing a customer appears. Some of these selling agents are honest enough, others thrive on the fees they get for advertising inventions, while they probably do not make one sale in five years. Inventors generally find their way to such agents as a last resort. Before closing a contract with any of the so-called selling agents, it would be well to ascertain what proportion of the patents advertised by them are really sold. There are 20,000 patents taken out in a year in the United States. If therefore, five per cent of the inventors who take out patents in a single year could be induced to pay to a selling agent \$10 each for the exhibition of models, advertising, etc., it will readily be seen that the agent will realize very handsome profits whether he effects sales or not. The best selling agent to employ is a man of the inventor's own acquaintance, in whom he has confidence. It is not material that he should have had experience in selling patents; if he be a good salesman he will probably make money for the inventor and himself.

THE VALUE OF PATENTS.

NATURALLY the inventor is not so anxious about how much his invention will advance civilization, or build up the nation, or administer to the wants and pleasures of mankind generally, as he is about how much it will net him in dollars and cents; but he must not forget that chance of profit is in proportion to the actual usefulness of an invention, and its adaptability to some great want felt by every one. And it matters little whether the inventor intends himself to deal with the public, or to deal with a man, or set of men, who are afterward to deal with the public—the conditions are the same.

Now let the inventor consider himself a disinterested party, a referee if you please. Let him look upon his own invention as that of another. If he honestly concludes that it would be desirable to himself and others, then he should have great confidence in the merit of his invention, and he should be able to make a fair estimate of the actual value of it.

There are from sixty to seventy millions of people in the United States. It is probable that no invention ever has been, or ever will be made which will reach half of these people, but it is possible that a patent on some food product or article of wearing apparel may put fifteen million under tribute to the inventor. If

only one sale could be made to each of this great number of people, and if only one cent were realized from each sale, the inventor would make the handsome profit of \$150,000. But suppose the article to be such as to be subject to regular consumption, so that each person would naturally purchase the article ten times per year; the profits would thus become \$1,500,000 dollars per year. This calculation, although within the range of possibilities, is rather extravagant. Take the other extreme, a profit of 1 mill per head on one-quarter of the inhabitants of this country would yield a total profit to the inventor of \$15,000.

The inventor must in some way determine whether his invention is one that is likely to be wanted by a quarter of the people of the United States or more, or less. This is a difficult question to settle. Everything depends upon the manner in which the invention is placed before the public, some men have the faculty of presenting an article in such a way as to make it seem indispensable to every one, while others will create the opposite impression. If a patented article is of such a nature as to admit of manufacturing it on a small scale, one of the best methods of arriving at its value, is to manufacture a limited quantity of the article, and try the experiment of introducing it in a small territory, say in a city, town, or county, taking great care to select a man who is capable of carrying forward the business in a business-like manner.

INVENTION AS AN ART.

To the popular mind the inventor, like the poet, is born, not made. Genius, it is thought, independent of education or practice, is its sole prerequisite. In some mysterious way Nature endows some men with power to conceive and produce new things and processes, which the world consciously or unconsciously needs, but, in the absence of the inventor's genius, is unable to get. Without a born capacity to invent, invention is deemed impossible, and rightly enough; but—herein arises the popular error—it is assumed that the faculty of original creation is a rare one, possessed by few, and not to be attained by others, however earnestly they may strive for it. On the contrary, the faculty is one common to the majority of men, more or less, and always ready to be made more under favorable conditions.

The singers in any community are relatively few; yet the most experienced teachers of music, who have had much to do in teaching music to large and unselected classes, unite in asserting that all men can learn to sing if they want to, and most men to sing fairly well.

It is much the same with invention. The innate

capacity is common; its practical and profitable development is much less common, for the reason that comparatively few try to develop it, the multitude believing that the fundamental "gift" is not theirs. Accordingly, it is only by accident, or through the stress of special circumstances, that most inventors discover that there is any chance for them in that field of productive effort. Once enlisted in the work, successfully or unsuccessfully, they are pretty sure to discover that invention is an art which must, for the most part, be mastered as other arts are, by diligent study and patient effort. Unlike other arts, however, its boundaries are not limited to any one field of thought or knowledge or action, but are in every direction limitless, though practically bordered on the hither side by what men have already discovered and done.

Practically bordered; for while the reproduction of an old device may, from the inventor's standpoint, be as perfect an act of invention as the newest and most original invention might be, the field for profitable invention lies mainly in regions new and unexplored. An invention must be novel to be patentable; and, except for practice, it is only patentable inventions that are worth making. Knowledge, therefore, specific, positive, and comprehensive knowledge, of what has been done in the field in which the inventor's work is to be done, and a clear apprehension of something that remains to be done, are important elements in

the successful inventor's outfit. The wider his range of such knowledge, the more numerous his opportunities to invent must naturally be, provided the manner in which his knowledge has been gained has not unfitted him for independent thought and action. A man may load himself with so many tools that he cannot work with any of them. In like manner overmuch learning may spoil a man for doing. The pack mule of an explorer's train is not likely to make many novel observations or discoveries.

To succeed in the art of invention it is commonly the rule that a habit of inventing must go hand in hand with observation and study. Sometimes a lucky hit may be made by an inexperienced inventor, just as men ignorant of minerals have stumbled on valuable mines. Nevertheless, the man who has trained himself to invent, and is in the habit of regarding every new fact or experience from the standpoint of its possible utility as a basis for invention, will excel the untrained inventor as surely in the long run as the practised prospector will the unintelligent and inexperienced "tenderfoot." And the case in favor of the practised inventor is even stronger, for the ability to recognize the need of an invention, though of primary importance, is less important than the ability to see how the need may be supplied and demonstrate the solution of the problem by doing it.

"Practice, practice, practice," said Demosthenes, is

the first requisite for success in oratory. Equally is it necessary for sure success in invention. It does not follow that the would-be orator must get his practice wholly in the forum; no more need the inventor get his practice in absolutely new inventions. The numerous preliminary failures which have led up to the great success of many greatly successful inventors, while they emphasize the need of practice in this art, quite as clearly indicate the wisdom of not confining practice to what promises to be patentable. The work of the novice in invention may be, frequently is, valuable in itself; but if large success in the art is aimed at, it will not pay to suspend practice for the lack of novelties to work on. The resolution of old problems affords excellent and useful practice for the beginner, who may find a ready test for the value of his work by comparing its results with those exhibited in the perfected inventions of more practised minds; and the habit thus gained of independently rebuilding and critically examining existing inventions will furnish admirable training for original work in fields entirely new.

The time may come when a systematic training in the art of invention, with practice in reinventing machines of greater or less complexity and the standard devices and movements of practical mechanics, will form a part of every first-rate machinist's education; and similarly in other departments of productive in-

dustry. But until then those who wish to fit themselves for the cultivation of this most inviting and profitable art, the art of invention, must be their own guides.

Not the least advantage in purposely reinventing for the sake of practice comes from the circumstance that such practice-work cannot lead to loss or disappointment, while it cannot fail to lead the student to a practical working knowledge of the materials and methods employed by the most successful inventors.

Such self-training is sure to pay. Much as our inventors have already accomplished, the art of invention, as an art, is yet in its infancy; and it is safe to say that the prizes offered for its successful cultivation in the future are vastly greater and more numerous than those it has awarded to its votaries in the past.
—*Scientific American*.

STATE LAWS REGULATING THE SALE OF PATENTS.

THERE have been in several States of the Union State Laws by which attempts have been made to regulate or prevent the sale of patent rights within the borders of these States. In some States patentees and their agents have been rigidly restricted to certain obnoxious State regulations, and made liable to fine and imprisonment. Most of these laws are non-existent to-day. They have been declared unconstitutional, as they are in direct conflict with the Laws of the United States.

The following is a decision relating to this point:

“In the Circuit Court of the United States, District of Indiana, Ex-parte Major J. Robinson—Petition for writ of Habeas Corpus.

“Be it remembered that heretofore,—to wit, on the 30th day of May, 1870, before the Honorable David Davis, one of the Judges of said Court, the following proceedings in the above entitled cause were had, to wit:

“It appears from the papers in this case that the petitioner, being the duly authorized agent of the owners of certain patents granted to Henry B. Good-

year, administrator, and to John A. Cummings, offered, on the 23d day of May, 1870, to Harrison H. La Fever, a dentist, in the county of Grant, in this State, the right to use the invention patented, for dental purposes, within said county, for the sum of \$100, which the said La Fever agreed to pay. Before the sale was completed, the District Attorney of the county instituted proceedings against the petitioner under the provisions of an act of the legislature of Indiana, entitled 'An Act to regulate the sale of patent rights, and to prevent fraud in connection therewith,' which took effect on the 23d day of April, 1869.

"These proceedings resulted in the petitioner being committed to the jail of the county, because he had failed, before he had offered to sell the patent right, to comply with the terms of the law.

"If the law is valid, he was properly held in custody; otherwise, he should have been discharged. This law declares that it shall be unlawful for any person to sell or barter any patent right in any county within the State without first filing with the Clerk of the Court of such county copies of the letters patent duly authenticated, and at the same time swearing to an affidavit before such clerk that such letters-patent are genuine, and have not been revoked or annulled, and that he has full authority to sell or barter the right so patented, which affidavit shall set forth his name, occupation, and residence, and, if an agent, the name,

occupation, and residence of his principal. A copy of this affidavit shall be filed in the office of said clerk, who shall furnish a copy of the same to the applicant, who shall exhibit the same to any person on demand. Penalties are imposed for any violation of these provisions.

“This is an attempt on the part of the legislature to direct the manner in which patent-rights shall be sold in the State, to prohibit their sale altogether if these directions are not complied with, and to throw burdens on the owners of this species of property which Congress has not seen fit to impose upon them. I have not time to elaborate the subject, nor even to cite the authorities bearing on the question, and shall therefore content myself with stating the conclusion which I have reached.

“It is clear that this kind of legislation is unauthorized. To Congress is given by the Constitution the power ‘to promote the progress of science and the useful arts by securing for limited times to authors and inventors the exclusive rights to their respective writings and discoveries.’ This power has been exercised by Congress, who have directed the manner in which patents shall be obtained, how they shall be assigned and sold.

“The property in inventions exists by virtue of the laws of Congress, and no State has a right to interfere with its enjoyment, or annex conditions to the grant.

If the patentee complies with the laws of Congress on the subject, he has a right to go into the open market anywhere within the United States, and sell his property. If this were not so, it is easy to see that a State could impose terms which would result in a prohibition of the sale of this species of property within its borders, and in this way nullify the laws of Congress which regulate its transfer, and destroy the power conferred upon Congress by the Constitution. The law in question attempts to punish by fine and imprisonment a patentee for doing with his property what the National Legislature has authorized him to do, and is therefore void. The petitioner is discharged."

Another later decision bearing on the same point was made by the United States Circuit Court, in Massachusetts, *Anthony vs. Carroll*, decided by Judge Shepley, October, 1875. This was an action to recover damages for an infringement which took place as far back as 1863, up to 1867. The defence was that under the State laws of Massachusetts—statute of limitations—the plaintiff could not recover, he not having brought the action within six years from the time of the alleged injury. This defence was not allowed. The court ruled as follows:

"Should the legislature of a State pass an act in express terms limiting the time for bringing an action in the federal courts for infringements of patent rights, there can be reasonable doubt that such a statute

would be unconstitutional and void. The policy of the Government to provide a uniform system of rights and remedies throughout the United States upon the whole subject matters of patents for new and useful inventions and discoveries, by placing it under the control of Congress and the federal courts, would be frustrated if such State legislation would directly or indirectly limit, restrict, or take away the remedy."

THE INVENTOR AND THE PROMOTER.

To make money out of a patent it is necessary in the first place, as already observed, to have an invention that possesses real merit and is in demand, or for which a demand may be created. In the second place, the inventor must have a patent that thoroughly protects his invention; in the third place, he must have the means of bringing his invention to public notice in such a manner as to create favorable impressions. Explanations and arguments are of little use in impressing upon the minds of capitalists the value of an invention. They will either judge of the matter themselves, or they will employ experts to examine it, and it cannot be denied that in either case the invention will suffer a cold-blooded examination which will not at all accord with the hopes and expectations of the inventor.

If, however, upon examination, the invention is adjudged to have real worth and is a genuine thing, it will finally be appreciated, when the business negotiations will begin. If, at this point, the inventor has not more business ability than inventors are usually credited with, the moneyed men will have him at a disadvantage, for he must be able to show in the

plainest way wherein the profits of the invention lie, while, on the other hand, the parties will endeavor to show him that the expenses of perfecting and bringing forward such an invention will be so great as to warrant only a small outlay for the patent.

The inventor must have a due appreciation of the value of his invention. He certainly will not underestimate it, he is liable to overrate it. In any case he must be liberal in his arrangement with men who are willing to establish a business on the basis of his patent. He will find that promoters will require a quarter or a half interest in his invention for their services.

It is almost impossible for an inventor to attend to these details of business. It is entirely foreign to his taste and inclination, and he generally lacks the business education which will enable him to hold his own against such men as are engaged in forming companies and promoting inventions in various ways. He therefore should employ a lawyer, if possible of his own acquaintance, who will conduct his part of the business for a small portion of his interest in the invention. A company will be organized, and a certain portion of the stock will be issued to the inventor for his invention, a part of which he may sell, but a portion of which he must retain to show his own confidence in the business. It is better, however, for the inventor to take payment for his invention partly in

stock and partly in cash. An inventor's stock is full paid and non-assessable. The stock which goes to the treasury of the company is sold to create a working capital. The direction of the business will probably be taken out of the hands of the inventor and the control will lie in the Board of Directors of the company. As a rule it is better that the inventor should not take an active part in the management of the company's affairs, for his views are apt to be biased; he should confine himself to the domain of invention. If the business is successful, he will find enough to engage his inventive abilities without undertaking the duties that belong to the foreman, superintendent, manager, treasurer, or secretary. If the company is provided with ample capital, and if the business manager is a competent man, there is little chance of failure if the invention has real merit.

THE FORMATION OF A COMPANY.

IN the State of New York three or more persons who may desire to do so may form a company for the purpose of carrying on any kind of manufacturing, mining, mechanical or chemical business, or the business of printing, publishing, or selling books, or for purchasing, taking, holding, and possessing real estate and buildings, and for conducting various other kinds of business. It is under this Act that companies are usually formed for manufacturing patent inventions.

The persons who thus constitute the company may make, sign, and acknowledge before some officer competent to take acknowledgment of deeds and file in the Office of the Clerk of the County in which the business of the company shall be carried on, and a duplicate thereof in the Office of the Secretary of State, a certificate in writing in which shall be stated the corporate name of the company, the objects for which the company shall be formed, the amount of stock of the said company, the time of its existence (not to exceed fifty years), the number of shares of which the stock shall consist; the number of Trustees and their names, who shall manage the concerns of the said company for the first year, and the name of the town or county in which

the operations of the said company are to be carried on. The amount of real estate and buildings owned by such a company is limited by law to \$1,000,000.

When the certificate above referred to has been filed, the persons who have signed and acknowledged the same, and their successors, constitute a body politic and corporate in fact and in name by the name stated in the certificate. By that name the company has succession, and it is capable of suing and being sued, in any court of law or equity in the State. They or their successors may have a common seal and make and alter the same at pleasure. They are capable in law of purchasing, holding and conveying any real and personal estate which may be necessary to enable the company to carry on their operations, but they have no right to mortgage the same or to give any lien thereon.

Such a company is managed by trustees who control the stock, the property, and all the concerns of the company. No company is allowed to have less than three or more than thirteen trustees, and they must be stockholders, and the majority of them must be citizens and residents of the city in which the business is located. With the exception of the first year the trustees are annually elected by the stockholders at such time and place as is indicated by the by-laws of the company; and notice of the time and place of holding such an election must be published not less than

ten days previously, in the newspaper printed nearest to the place where the operations of the company are carried on. The elections are made by the stockholders in person, or by proxy. All elections are required to be by ballot. Each stockholder is entitled to as many votes as he owns shares of stock in the company. Persons receiving the greatest number of votes are elected trustees. Vacancies occurring in the Board of trustees may be filled in any manner provided by the by-laws.

The officers of a company are the president, who may be designated from the board of trustees, and such subordinate officers as the by-laws of the company require. These may be elected or appointed, and are required to give security for the faithful performance of duty.

The trustees of a company may at any time call in money subscribed by the stockholders. The trustees may make such by-laws as they deem proper for the management and disposition of the stock and business affairs of the company, providing the laws are not inconsistent with the laws of the State. Stock in such a company is regarded as personal estate, and is transferable in the manner prescribed in the by-laws of the company, but no shares of stock can be transferred until all previous calls thereon have been fully paid in, or shall have been declared forfeited for non-payment of calls.

It is not lawful for a company to use any of its funds for the purchase of stock in other companies. All of the stockholders of every company incorporated under this act are severally and individually liable to the creditors of the company in which they are stockholders to an amount equal to the amount of stock held by them, for all debts and contracts made by such company until the whole amount of capital stock fixed and limited by said company shall have been paid in and the certificate thereof shall have been made and recorded as described further on, and the capital stock so fixed and limited must all be paid in, one-half within one year and the other half within two years from the incorporation of such a company, or the company shall be dissolved.

The president and a majority of the trustees within thirty days after the payment of the last instalment of the capital stock must make a certificate stating the amount of capital fixed and paid in. The certificate is to be signed and sworn to by the president and a majority of the trustees, and they shall within thirty days record it in the office of the county clerk of the county wherein the business of the company is carried on.

Every company within twenty days from the 1st of January after the expiration of a year from the time of filing the certificate, must make a report and publish it in a newspaper published in the town, city, or vil-

lage, or if there be no newspaper published in the said town, city, or village, then in some newspaper published nearest the place where the business of the company is carried on, which must state the amount of capital, the proportion actually paid in, and the amount of its debts. Such report must be signed by the president and a majority of the trustees, and verified by the oath of the president or secretary of the company, and filed in the office of the clerk of the county where the business of the company is carried on.

In any company failing so to do, all the trustees are jointly and severally liable for all the debts of the company then existing, and for all that may be contracted before the report is made. It is provided, however, that when a judgment is recovered against a trustee severally, all the trustees of the company are obliged to contribute a pro rata share of the amount paid by such trustee on the judgment, and such trustee has the right of action against the co-trustees, jointly or severally, to recover from them their proportion of the amount so paid on the judgment.

Trustees cannot pay dividends when the company is insolvent, nor can they pay dividends which will render it insolvent, or which will diminish the amount of its capital stock. If the trustees declare such dividends, they are rendered jointly and severally liable for all the debts of the company then existing, and for all which shall be thereafter contracted while they

shall continue in office, but if any of the trustees shall object to the declaring of such a dividend and to the payment of the same, and shall at any time before the time fixed for the payment thereof file a certificate of his objection with the clerk of the company and with the clerk of the county, he is exempt from the liability.

The company cannot receive anything but money as payment for any part of the capital stock. The company may at any time, under certain conditions, increase or diminish its capital stock. If any person owning five per cent of the capital stock of any company, not exceeding one hundred thousand dollars, or any person owning three per cent of the capital stock of any company exceeding one hundred thousand dollars, formed under the general law, shall present a written request to the treasurer of the company that he desires a statement of the affairs of the company, it is the duty of the treasurer to make such a statement under oath, embracing a true account of all its assets and liabilities in minute detail, and to deliver the said statement to the person who presented the request for such statement with twenty days after such presentation. He is also obliged to keep a copy of such statement on file for six months, and this copy is to be exhibited to any stockholder of the said company demanding an examination thereof.

The treasurer is not required to deliver such state-

ment oftener than once in any six months. The penalty for refusing to comply with any of the provisions of this act is fifty dollars, and a further sum of ten dollars for every twenty-four hours thereafter until the statement is furnished.

Such in brief is a general resumé of the law of the State of New York relating to corporations. The laws are quite similar in different States.

For special information regarding the law, and for forms for the organization of companies, application should be made to the law publishers in different States.

LIMITED LIABILITY COMPANIES.

IN limited liability companies the name of the company is required in every case to have as its last word, the word "limited," and every such corporation is compelled by law to paint or affix its name on the outside of every office or place in which the business of the company is carried on, in a conspicuous position, in letters easily legible, and its full name must also be stated in plain characters in all notices, advertisements, and other official publications of such company, and in all bills of exchange, promissory notes, checks, orders for money, bills of lading, invoices, receipts, letters, and other writings used in the transaction of the business of the company.

Every officer or director in a limited liability company is personally liable for any indebtedness, damage, or liability incurred during the omission of the word "limited," from the name of the company, and the company is liable for such omission to a penalty of not exceeding \$25 for such omission for every day during which such name is not so kept painted or affixed, and every director or officer of such company who shall authorize or permit such omission is liable to a like penalty.

In a limited liability company all of the stockholders are individually liable to the creditors of the company to an amount equal to the amount of stock held by them.

Before the organization of a full liability or limited liability company the parties contemplating the organization of such company should purchase a copy of the Laws of the State under which the company is to be organized, and the organization should be perfected under the care of a competent person familiar with such matters.

FORMS FOR APPLICATION FOR A PATENT.

WHERE an applicant desires to prepare his own papers and file his own application, he may do so by employing the following forms.

FORMS OF PETITION.

PETITION BY A SOLE INVENTOR.

TO THE COMMISSIONER OF PATENTS:

Your petitioner, A. B., a citizen of the United States, residing at S., in the County of M., and State of N. (or subject, etc.), prays that Letters Patent be granted to him for the improvement in ———— set forth in the annexed specification.

A——— B———.

PETITION BY JOINT INVENTORS.

TO THE COMMISSIONER OF PATENTS:

Your petitioners, A——— B——— and C——— D———, citizens of the United States, residing respectively at L———, in the County of M———, and State of N———, and at G———, in the County of H———, and State of I——— (or subjects, etc.), pray that Letters Patent may be granted to them, as joint inventors, for the improvement in ———— set forth in the annexed specification.

A——— B———.

C——— D———.

THE SPECIFICATION.

WHEN the application is for a machine the form should be as follows:

TO ALL WHOM IT MAY CONCERN:

Be it known that I, A. B., a citizen of the United States, residing at L., in the County of M., and State of N. (or subject, etc.), have invented a new and useful ——— (for which I have obtained a patent in Great Britain, No. ——— bearing date ———, 18—,)* of which the following is a specification.

Here follows a statement of the object of the invention. This should point out in concise terms the purpose for which the invention is intended, and if it is an invention calculated to surmount difficulties hitherto experienced in analogous devices, the inventor may relate what these difficulties are and how he proposes to overcome them. Then should follow a statement of the invention, which should consist of a brief description setting forth the essential features of the invention.

Then follows a brief description of the figures of the drawing, referring to them by number and describing

* Omit if a foreign patent has not been taken.

what each figure represents. Then the inventor should give as full and complete a description as possible of the construction of the machine, referring to all the parts by letter, taking care that the same letter represents the same part in the different figures of the drawing, and he may describe the operation of the machine as he proceeds, or a description of the operation might follow the description of the construction. The main thing in a specification is to describe the parts and their functions so clearly that there can be no misunderstanding as to the meaning of the inventor.

After this description follows the claim. This is the vital part of the application. It may consist of one or more clauses, and each clause should clearly point out a combination of parts, which taken together accomplish some result; or a claim clause may refer to only a single part, providing this part is new of itself, and has some function.

The oath comes after the claims.

The form of oath for an application for a machine is here given.

OATH BY AN INVENTOR.

State of _____, }
 County of _____, } ss:

_____, the above-named petitioner, citizen of _____, and resident of _____, in the County of _____ and State of _____, being duly sworn (or affirmed), deposes and says that _____ verily believes _____ to be the original, first, and _____ inventor of the improvement in _____ described and claimed in the foregoing specification; that the same has not been patented to _____, or to others with _____ knowledge or consent (and when patented abroad add the following—except in the following countries:.....:)) that the same has not to _____ knowledge been in public use or on sale in the United States for more than two years prior to this application, and _____ do not know and do not believe that the same was ever known or used prior to _____ invention thereof.

(Inventor's full name): _____.

Sworn to and subscribed before me this _____ day of _____, 18—.

(L. S.) (Signature of Justice or Notary):

(Official character):

 _____.

As previously stated, it is considered important that the inventor should employ a competent attorney, yet if he is really determined to attempt the task of the preparation of his own case he should first send to the Commissioner of Patents at Washington, D. C., for the rules of Practice in the United States Patent Office, which are sent free to any address. It will be found also in a majority of cases, that even after following the Rules faithfully and making every exertion to prepare a good case, the Patent Office will criticise it closely, and it will finally have to be turned over to an attorney, the cost in such a case being as much or more than it is where the case is given to the Patent Attorney at first.

ASSIGNMENT OF AN ENTIRE INTEREST
IN AN INVENTION BEFORE THE ISSUE
OF LETTERS PATENT.

WHEREAS, I, J—— S——, of L——, County of M——, State of N——, have invented a certain new and useful improvement in Steam Engines, for which I am about to make application for letters patent of the United States; and whereas G—— D——, of R——, County of S——, State of N——, is desirous of acquiring an interest in said invention, and in the letters patent to be obtained therefore:

Now, therefore, to all whom it may concern, be it known that, for and in consideration of the sum of five thousand dollars to me in hand paid, the receipt of which is hereby acknowledged, I, the said J—— S——, have sold, assigned, and transferred, and by these presents do sell, assign, and transfer unto the said G—— D——, the full and exclusive right to the said invention, as fully set forth and described in the specification prepared and executed by me on the —— day of —— 188—, preparatory to obtaining Letters Patent of the United States therefor; and I do hereby authorize and request the Commissioner of

Patents to issue the said letters patent to the said G—— D——, as the assignee of my entire right, title, and interest in and to the same, for the sole use and behoof of the said G —— D——, and his legal representatives.

In testimony whereof I have hereunto set my hand and affixed my seal this —th day of ——, A.D. 188—.
A—— B——. [Seal.]

In presence of

G—— W——.

T—— J——.

OF THE ENTIRE INTEREST IN LETTERS
PATENT.

WHEREAS I, A—— B——, of L——, County of M——, State of N——, did obtain letters patent of the United States for an improvement in Steam Engines, which letters patent are numbered —— and bear date the —— day of —— in the year ——, and whereas I am now the sole owner of said patent and of all rights under the same; and whereas E—— F——, of ——, County of S——, State of N—— is desirous of acquiring the entire interest in the same:

Now, therefore, to all whom it may concern, be it known that, for and in consideration of the sum of five thousand dollars to me in hand paid, the receipt of which is hereby acknowledged, I, the said A—— B——, have sold, assigned, and transferred, and by these presents do sell, assign, and transfer unto the said E—— F——, the whole right, title, and interest in and to the said improvement in Steam Engines, and in and to the letters patent therefor aforesaid: the same to be held and enjoyed by the said E—— F——, for his own use and behoof, and for the use and behoof of his legal representatives, to the full end of the term for which said letters patent are or may

be granted as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not been made.

In testimony whereof I have hereunto set my hand and affixed my seal at L——, in the County of M——, and State of N,——— this —th day of —— A.D. 18—.

A—— B——. [Seal.]

In presence of

G—— W——.

T—— J——.

ASSIGNMENT OF AN UNDIVIDED INTEREST
IN LETTERS PATENT.

WHEREAS, I, A—— B——, of L——, County of M——, State of N——, did obtain Letters Patent of the United States for an improvement in sewing machines, which Letters Patent are numbered ——, and bear date the —— day of August, in the year 18—; and whereas C——, of R——, County of S——, State of N——, is desirous of acquiring an interest in the same:

Now, therefore, to all whom it may concern, be it known that, for and in consideration of the sum of —— dollars to me in hand paid, the receipt of which is hereby acknowledged, I, the said A—— B——, have sold, assigned, and transferred, and by these presents do sell, assign, and transfer unto the said C—— D——, the undivided one-half part of the whole right, title, and interest in and to the said invention, and in and to the Letters Patent therefor aforesaid: the said undivided one-half part to be held and enjoyed by the said C—— D——, for his own use and behoof, and for the use and behoof of his legal representatives, to the full end of the term for which

said Letters Patent are or may be granted (thus including extension), as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not been made.

In testimony whereof I have hereunto set my hand and affixed my seal at L———, in the County of M———, and State of N———, this — day of ———, A.D. 18—.

A——— B———. [Seal.]

In presence of

N——— P———.

O——— T———.

TERRITORIAL INTEREST AFTER GRANT OF
PATENT.

WHEREAS I, S—— M——, of P——, County of G——, State of O——, did obtain Letters Patent of the United States for improvements in ——, which Letters Patent are numbered —— and bear date the ——th day of ——, in the year 18—; and whereas I am now the sole owner of the said patent and of all rights under the same in the below-recited territory; and whereas E—— S——, of S——, County of D——, State of O——, is desirous of acquiring an interest in the same:

Now, therefore, to all whom it may concern, be it known that, for and in consideration of the sum of —— dollars to me in hand paid, the receipt of which is hereby acknowledged, I, the said S—— M——, have sold, assigned, and transferred, and by these presents do sell, assign, and transfer unto the said E—— S——, all the right, title, and interest in and to the said invention, as secured to me by said Letters Patent, for, to, and in the State of O——, and for, to, or in no other place or places; the same to be held and enjoyed by the said E—— S—— within and throughout the above-specified territory, but not

elsewhere, for his own use and behoof, and for the use and behoof of his legal representatives, to the full end of the term for which said Letters Patent are or may be granted (thus including extension), as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not been made.

In testimony whereof I have hereunto set my hand and affixed my seal at P——, in the County of G——, and State of O——, this —— day of ——, A.D. 18—.

S—— M——. [Seal].

In presence of

J—— H——.

R—— E——.

LICENSE NOT EXCLUSIVE, WITH ROYALTY.

THIS agreement, made this 26th day of December, 18—, between S—— M——, of P——, in the County of G——, and State of O——, party of the first part, and J—— B—— & Co., of W——, in the County of S——, and State of O——, party of the second part, witnesseth, that whereas Letters Patent of the United States, No. ———, for an improvement in ——— were granted to the party of the first part, dated November 6th, 18—; and whereas the party of the second part is desirous of manufacturing ——— containing said patented improvements: Now, therefore, the parties have agreed as follows:

I. The party of the first part hereby licenses and empowers the party of the second part to manufacture, subject to the conditions hereinafter named, at their factory in W——, and in no other place or places, to the end of the term for which said Letters Patent were granted———, containing the patented improvements, and to sell the same within the United States.

II. The party of the second part agrees to make

L. of C.

full and true returns to the party of the first part, under oath, upon the first days of January and July in each year, of all ————— containing the patented improvements manufactured by them.

III. The party of the second part agrees to pay to the party of the first part five dollars as a license-fee upon every ————— manufactured by said party of the second part containing the patented improvements; provided, that if the said fee be paid upon the days provided herein for semi-annual returns, or within ten days thereafter, a discount of five per cent shall be made from said fee for prompt payment.

IV. Upon a failure of the party of the second part to make returns or to make payment of license-fees, as herein provided, for thirty days after the days herein named, the party of the first part may terminate this license by serving a written notice upon the party of the second part; but the party of the second part shall not thereby be discharged from any liability to the party of the first part for any license-fees due at the time of the service of said notice.

In witness whereof the parties above named have hereunto set their hands the day and year first above written at P——, in the County of G——, and State of O——.

S—— M——.

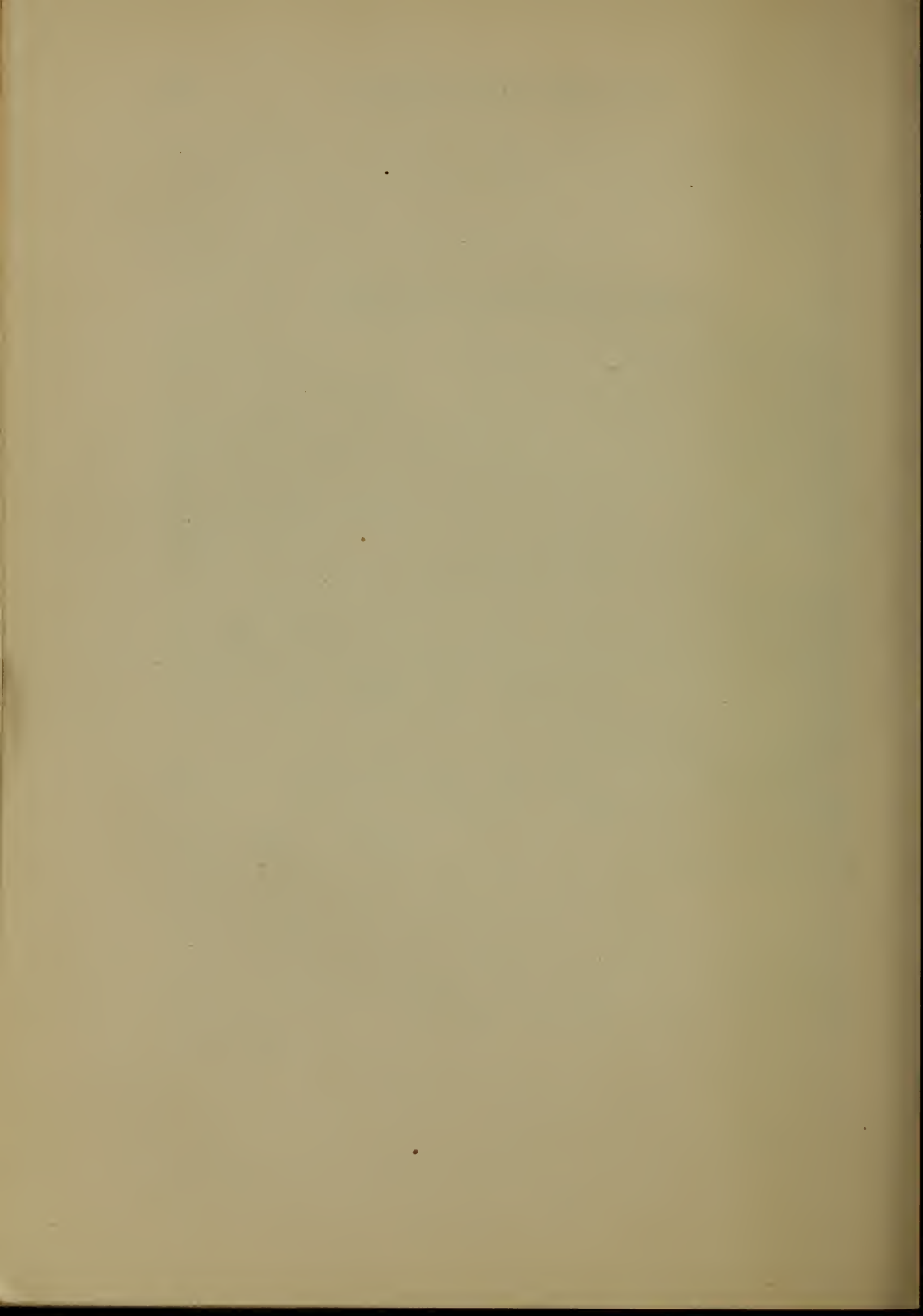
J—— B—— & Co.

LICENSE SHOP RIGHT.

IN consideration of the sum of ——— dollars, to be paid by the firm of J—— B—— & Co., of P——, in the County of G——, State of O——, I do hereby license and empower the said J—— B—— & Co. to manufacture in said P—— (or other place agreed upon), the improvement in ——— ———, for which Letters Patent of the United States, No. ——— were granted to me, December 13th, 18—, and to sell the machines so manufactured throughout the United States, to the full end of the term for which said Letters Patent are granted.

Signed at P——, in the County of G——, and State of O——, this ———day of ———, 18—.

S—— M——.



TWELFTH CENSUS OF THE UNITED STATES.

By Counties of over Ten Thousand Population.

COMPILED FROM THE OFFICIAL CENSUS FOR 1900.

ALABAMA.—Total Population, 1,828,697.

| | | | |
|-------------------|-------------------|--------------------|--------------------|
| Autauga...17,915 | Conecuh...17,514 | Henry.....36,147 | Montgom'y72,047 |
| Baldwin...13,194 | Coosa.....16,144 | Jackson....30,508 | Morgan....28,820 |
| Barbour...35,152 | Covington..15,346 | Jefferson..140,420 | Perry.....31,783 |
| Bibb.....18,498 | Crenshaw...19,668 | Lamar.....16,084 | Pickens....24,402 |
| Blount....23,119 | Cullman....17,849 | Lauderdale26,559 | Pike.....29,172 |
| Bullock...31,944 | Dale.....21,189 | Lawrence..20,124 | Randolph..21,647 |
| Butler....25,761 | Dallas.....54,657 | Lee.....31,826 | Russell....27,083 |
| Calhoun...34,874 | Dekalb....23,558 | Limestone.22,387 | St. Clair...19,425 |
| Chambers.32,554 | Elmore....26,099 | Lowndes...35,651 | Shelby....23,684 |
| Cherokee..21,096 | Escambia..11,320 | Macon.....23,126 | Sumter....32,710 |
| Chilton...16,522 | Etowah....27,361 | Madison....43,702 | Talladega..35,773 |
| Choctaw...18,136 | Fayette...14,132 | Marengo...38,315 | Tallapoosa29,675 |
| Clarke....27,790 | Franklin...16,511 | Marion....14,494 | Tuscaloosa36,147 |
| Clay.....17,099 | Geneva....19,096 | Marshall...23,289 | Walker....25,162 |
| Cleburne..13,206 | Greene....24,182 | Mobile.....62,740 | Wash'ton..11,134 |
| Coffee.....20,972 | Hale.....31,011 | Monroe.....23,666 | Wilcox....35,631 |
| Colbert...22,341 | | | |

ARIZONA.—Total Population, 122,931.

| | | | |
|-----------------|-------------------|-----------------|------------------|
| Graham...14,162 | Maricopa...20,457 | Pima.....14,689 | Yavapai...13,799 |
|-----------------|-------------------|-----------------|------------------|

ARKANSAS.—Total Population, 1,311,564.

| | | | |
|-------------------|-------------------|--------------------|-------------------|
| Arkansas..12,973 | Drew.....19,451 | Lincoln....13,389 | Pulaski....63,179 |
| Ashley....19,734 | Faulkner..20,780 | Little River13,731 | Randolph..17,156 |
| Benton...31,611 | Franklin...17,395 | Logan.....20,563 | St. Francis17,157 |
| Boone....16,396 | Fulton....12,917 | Lonoke....22,544 | Saline.....13,122 |
| Carroll...18,848 | Garland...18,773 | Madison...19,864 | Scott.....13,183 |
| Chicot....14,528 | Greene....16,979 | Marion....11,277 | Searcy....11,985 |
| Clark.....21,289 | Hempstead24,101 | Miller.....17,558 | Sebastian..36,935 |
| Clay.....15,886 | Hot Spring12,748 | Mississippi16,384 | Sevier....16,339 |
| Cleveland.11,620 | Howard....14,076 | Monroe....16,816 | Sharp.....12,199 |
| Columbia..22,077 | Independ'e22,557 | Nevada....16,609 | Union.....22,495 |
| Conway...19,772 | Izard.....13,506 | Newton....12,538 | Van Buren11,220 |
| Craighead.19,505 | Jackson...18,383 | Ouachita..20,892 | Washing'n.34,256 |
| Crawford..21,270 | Jefferson..40,972 | Phillips...26,561 | White....24,864 |
| Crittenden14,529 | Johnson...17,448 | Pike.....10,301 | Woodruff..16,304 |
| Cross.....11,051 | Lafayette..10,594 | Polk.....18,352 | Yell.....22,750 |
| Dallas.....11,518 | Lawrence..16,491 | Pope.....21,715 | |
| Desha.....11,511 | Lee.....19,409 | Prairie....11,875 | |

CALIFORNIA.—Total Population 1,485,053.

| | | | |
|-------------------|-------------------|--------------------|-------------------|
| Alameda...130,197 | Marin.....15,702 | S. Bernad'o 27,929 | Shasta.....17,318 |
| Amador...11,116 | Mendocino.20,465 | San Diego..35,090 | Siskiyou..16,962 |
| Butte.....17,117 | Monterey...19,380 | S. Franc'o 342,782 | Solano.....24,143 |
| Calaveras..11,200 | Napa.....16,451 | S. Joaquin.35,452 | Sonoma...38,480 |
| Con. Costa.18,046 | Nevada.....17,789 | S. L. Obispo16,637 | Tehama....10,996 |
| Fresno.....37,862 | Orange....19,696 | San Mateo..12,094 | Tulare.....13,375 |
| Humboldt..27,104 | Placer.....15,786 | S. Barbara.18,934 | Tuolumne..11,166 |
| Kern.....16,480 | Riverside..17,897 | Santa Clara60,216 | Ventura....14,367 |
| LosAng'l's170,298 | Sacramento45,915 | Santa Cruz.21,512 | Yolo.....13,618 |

COLORADO.—Total Population, 539,700.

| | | | |
|-------------------|------------------|-------------------|-------------------|
| Arapahoe.153,017 | Fremont...15,636 | Las Animas21,842 | Teller.....29,002 |
| Boulder....21,544 | Lake.....18,054 | Otero.....11,522 | Weld.....16,808 |
| El Paso....31,602 | Larimer...12,168 | Pueblo.....34,448 | |

CONNECTICUT.—Total Population, 908,355.

| | | | |
|--------------------|--------------------|-------------------|-------------------|
| Fairfield..184,203 | Litchfield..63,672 | N. Haven..269,163 | Tolland....24,523 |
| Hartford..195,415 | Middlesex..41,760 | N. London.82,758 | Windham..46,861 |

DELAWARE.—Total Population, 184,735.

| | | |
|-----------------|-----------------------|-------------------|
| Kent.....32,762 | Newcastle.....109,697 | Sussex.....42,276 |
|-----------------|-----------------------|-------------------|

DISTRICT OF COLUMBIA.—Total Population, 278,718.

| | |
|-------------------|---------|
| The District..... | 278,718 |
|-------------------|---------|

FLORIDA.—Total Population, 528,542.

| | | | |
|-------------------|-------------------|------------------|-------------------|
| Alachua...32,245 | Hamilton 11,881 | Madison...15,446 | Putnam....11,641 |
| Bradford...10,295 | Hillsboro..36,013 | Marion....24,403 | Santa Rosa.10,293 |
| Columbia..17,094 | Jackson...23,377 | Monroe....18,006 | Suwanee...14,554 |
| Duval.....39,733 | Jefferson..16,195 | Orange....11,374 | Volusia...10,003 |
| Escambia..28,313 | Leon.....19,887 | Polk.....12,472 | Washingt'n10,154 |
| Gadsden...15,294 | | | |

GEORGIA.—Total Population, 2,216,331.

| | | | |
|-------------------|-------------------|-------------------|-------------------|
| Appling...12,336 | Dougherty.13,679 | Jackson...24,039 | Putnam....13,436 |
| Baldwin...17,768 | Early.....14,828 | Jasper.....15,033 | Randolph..16,847 |
| Banks.....10,545 | Elbert...19,729 | Jefferson..18,212 | Richmond.53,735 |
| Bartow....20,823 | Emanuel...21,379 | Johnson...11,409 | Screven...19,252 |
| Berrien...19,440 | Fannin....11,214 | Jones.....13,358 | Spalding...17,619 |
| Bibb.....50,473 | Fayette...10,114 | Laurens...25,908 | Stewart....15,856 |
| Brooks....18,606 | Floyd.....33,113 | Lee.....10,344 | Sumter....26,212 |
| Bulloch...21,377 | Forsyth...11,550 | Liberty....13,093 | Talbot.....12,197 |
| Burke.....30,165 | Franklin..17,700 | Lowndes...20,036 | Tattnall...20,419 |
| Butts.....12,805 | Fulton....117,363 | Macon.....14,093 | Telfair....10,083 |
| Carroll...26,576 | Gilmer....10,198 | Madison...13,224 | Terrell....19,023 |
| Chatham..71,239 | Glynn.....14,317 | Marion....10,080 | Thomas....31,076 |
| Chattooga.12,952 | Gordon...14,119 | Meriwether23,339 | Troup.....24,002 |
| Cherokee...15,243 | Greene....16,542 | Mitchell...14,767 | Upson.....13,670 |
| Clarke....17,708 | Gwinnett..25,585 | Monroe....20,682 | Walker....15,661 |
| Cobb.....24,664 | Habersham13,604 | Montgom'y16,359 | Walton....20,942 |
| Coffee.....16,169 | Hall.....20,752 | Morgan....15,813 | Ware.....13,761 |
| Colquitt...13,636 | Hancock...18,277 | Muscogee..29,836 | Warren....11,463 |
| Columbia...10,653 | Haralson..11,922 | Newton....16,734 | Washingt'n28,227 |
| Coweta....24,980 | Harris....18,009 | Oglethorpe17,881 | Whitfield..14,509 |
| Crawford..10,368 | Hart.....14,492 | Paulding..12,969 | Wilcox....11,097 |
| Decatur...29,454 | Heard.....11,177 | Pike.....18,761 | Wilkes....20,866 |
| DeKalb...21,112 | Henry....18,602 | Polk.....17,856 | Wilkinson.11,440 |
| Dodge.....13,975 | Houston...22,641 | Pulaski....18,489 | Worth.....18,664 |
| Dooley.....26,567 | Irwin.....13,645 | | |

TWELFTH CENSUS OF THE UNITED STATES. 105

IDAHO.—Total Population, 161,772.

| | | | |
|------------------|------------------|-------------------|-------------------|
| Ada.....11,559 | Bingham...10,447 | Kootenai...10,216 | Nez Perces.13,748 |
| Alturas..... | Fremont...12,821 | Latah.....13,451 | Shoshone..11,950 |
| Bannock...11,702 | | | |

ILLINOIS.—Total Population, 4,821,550.

| | | | |
|--------------------|--------------------|-------------------|--------------------|
| Adams.....67,058 | Ford.....18,359 | Livingston.42,035 | Randolph..28,001 |
| Alexander..19,384 | Franklin...19,675 | Logan.....28,680 | Richland...16,391 |
| Bond.....16,078 | Fulton....46,201 | McDonough28,412 | Rock Island55,249 |
| Boone.....15,791 | Gallatin...15,836 | McHenry..29,759 | St. Clair...86,685 |
| Brown.....11,557 | Greene.....23,402 | McLean....67,843 | Saline.....21,685 |
| Bureau....41,112 | Grundy....24,186 | Macon.....44,003 | Sangamon...71,593 |
| Carroll....18,963 | Hamilton..20,197 | Macoupin..42,256 | Schuyler...16,129 |
| Cass.....17,222 | Hancock...32,215 | Madison...64,694 | Scott.....10,455 |
| Champaign47,622 | Henderson.10,836 | Marion....30,446 | Shelby.....32,126 |
| Christian..32,790 | Henry.....40,049 | Marshall...16,370 | Stark.....10,186 |
| Clark.....24,033 | Iroquois...38,014 | Mason.....17,491 | Stephenson34,933 |
| Clay.....19,553 | Jackson....33,871 | Massac....13,110 | Tazewell...33,221 |
| Clinton....19,824 | Jasper....20,160 | Menard....14,336 | Union.....22,610 |
| Coles.....34,146 | Jefferson...28,133 | Mercer....20,945 | Vermilion..65,635 |
| Cook.....1,838,735 | Jersey.....14,612 | Monroe....13,847 | Wabash....12,583 |
| Crawford..19,240 | Jo Daviess.24,533 | Montgom'y30,836 | Warren...23,163 |
| Cumberl'd..16,124 | Johnson...15,667 | Morgan....35,006 | Washing'n.19,526 |
| Dekalb....31,756 | Kane.....78,792 | Moultrie...15,224 | Wayne.....27,626 |
| Dewitt....18,972 | Kankakee..37,154 | Ogle.....29,129 | White.....25,386 |
| Douglas...19,097 | Kendall....11,467 | Peoria.....88,608 | Whiteside..34,710 |
| Dupage....28,196 | Knox.....43,612 | Perry.....19,830 | Will.....74,764 |
| Edgar.....24,273 | Lake.....34,504 | Platt.....17,706 | Williamson27,796 |
| Edwards...10,345 | Lasalle....87,776 | Pike.....31,595 | Winnebago47,845 |
| Effingham.20,465 | Lawrence..16,523 | Pope.....13,585 | Woodford..21,822 |
| Fayette....28,065 | Lee.....29,894 | Pulaski....14,554 | |

INDIANA.—Total Population, 2,516,462.

| | | | |
|-------------------|--------------------|-------------------|--------------------|
| Adams.....22,232 | Franklin...16,388 | Laporte....38,386 | Ripley.....19,881 |
| Allen.....77,270 | Fulton.....17,453 | Lawrence..25,749 | Rush.....20,148 |
| Bartholo'w24,594 | Gibson.....30,099 | Madison....70,470 | St Joseph..58,881 |
| Benton....13,123 | Grant.....54,693 | Marion....197,227 | Shelby....26,491 |
| Blackford..17,213 | Greene.....28,530 | Marshall...25,119 | Spencer....22,407 |
| Boone.....26,321 | Hamilton..29,914 | Martin.....14,711 | Starke.....10,431 |
| Carroll....19,953 | Hancock...19,189 | Miami.....28,344 | Steuben...15,219 |
| Cass.....34,545 | Harrison...21,702 | Monroe....20,873 | Sullivan...26,005 |
| Clark.....31,835 | Hendricks..21,292 | Montgom'y29,388 | Switzerland11,840 |
| Clay.....34,285 | Henry.....25,088 | Morgan....20,457 | Tippecanoe38,659 |
| Clinton....28,202 | Howard....28,575 | Newton....10,448 | Tipton....19,116 |
| Crawford..13,476 | Hunting'n28,901 | Noble.....23,533 | Vanderb'rg71,769 |
| Daviess....29,914 | Jackson....26,633 | Orange.....16,854 | Vermilion...15,252 |
| Dearborn..22,194 | Jasper.....14,292 | Owen.....15,149 | Vigo.....62,035 |
| Decatur....19,518 | Jay.....26,818 | Parke.....23,000 | Wabash....28,235 |
| Dekalb....25,711 | Jefferson...22,913 | Perry.....18,778 | Warren....11,371 |
| Delaware..49,624 | Jennings...15,757 | Pike.....20,486 | Warrick....22,329 |
| Dubois....20,357 | Johnson...20,223 | Porter.....19,175 | Washing'n19,409 |
| Elkhart....45,052 | Knox.....32,746 | Posey.....22,333 | Wayne....38,970 |
| Fayette....13,495 | Kosciusko..29,109 | Pulaski....14,033 | Wells.....23,449 |
| Floyd.....30,118 | Lagrange..15,284 | Putnam....21,478 | White.....19,138 |
| Fountain..21,446 | Lake.....37,892 | Randolph..28,653 | Whitley....17,328 |

IOWA.—Total Population, 2,231,853.

| | | | |
|------------------|------------------|-------------------|-------------------|
| Adair.....16,192 | Audubon...13,626 | Bremer....16,305 | Calhoun....18,569 |
| Adams.....13,601 | Benton....25,177 | Buchanan..21,427 | Carroll....20,319 |
| Alamakee..18,711 | Blackhawk32,399 | Bu'na Vista16,975 | Cass.....21,274 |
| Appanoose25,927 | Boone.....28,200 | Butler.....17,955 | Cedar.....19,371 |

IOWA.—Continued.

| | | | |
|--------------------|--------------------|--------------------|--------------------|
| Cer' Gordo. 20,672 | Guthrie.... 18,729 | Lucas..... 16,126 | Ringgold... 15,325 |
| Cherokee... 16,570 | Hamilton... 19,514 | Lyon..... 13,165 | Sac..... 17,639 |
| Chickasaw. 17,037 | Hancock... 13,752 | Madison... 17,710 | Scott..... 51,558 |
| Clarke..... 12,440 | Hardin... 22,794 | Mahaska... 34,273 | Shelby..... 17,932 |
| Clay.... 13,401 | Harrison... 25,597 | Marion.... 24,159 | Sioux..... 23,337 |
| Clayton.... 27,750 | Henry..... 20,022 | Marshall... 29,991 | Story..... 23,159 |
| Clinton.... 43,832 | Howard... 14,512 | Mills..... 16,764 | Tama..... 24,585 |
| Crawford.. 21,685 | Humboldt. 12,667 | Mitchell... 14,916 | Taylor..... 18,784 |
| Dallas..... 23,058 | Ida..... 12,227 | Monona.... 17,980 | Union..... 19,928 |
| Davis..... 15,620 | Iowa..... 19,544 | Monroe.... 17,985 | Van Buren. 17,354 |
| Decatur.... 18,115 | Jackson... 23,615 | Montgom'y 17,803 | Wapello.... 35,426 |
| Delaware.. 19,185 | Jasper.... 26,976 | Muscatine. 28,242 | Warren.... 20,376 |
| Des Moines. 35,989 | Jefferson.. 17,437 | O'Brien... 16,985 | Wash'gton 20,718 |
| Dubuque... 56,403 | Johnson... 24,817 | Page..... 24,187 | Wayne.... 17,491 |
| Fayette.... 29,845 | Jones..... 21,954 | Palo Alto.. 14,354 | Webster... 31,757 |
| Floyd..... 17,754 | Keokuk.... 24,979 | Plymouth.. 22,209 | Winnebago 12,725 |
| Franklin... 14,996 | Kossuth... 22,720 | Pocahontas 15,339 | Winnesh'k 23,731 |
| Fremont... 18,546 | Lee..... 39,719 | Polk..... 82,624 | Woodbury.. 54,610 |
| Greene.... 17,820 | Linn..... 55,392 | Pottaw'mie 54,336 | Worth..... 10,887 |
| Grundy.... 13,757 | Louisa.... 13,516 | Poweshiek. 19,414 | Wright... 18,227 |

KANSAS.—Total Population, 1,470,495.

| | | | |
|--------------------|--------------------|--------------------|-------------------|
| Allen..... 19,507 | Douglas... 25,096 | Lyon..... 25,074 | Pottaw'me 18,470 |
| Anderson.. 13,938 | Elk..... 11,443 | McPherson. 21,421 | Reno..... 29,027 |
| Atchison... 28,606 | Franklin... 21,354 | Marion.... 20,676 | Republic.. 18,248 |
| Barton.... 13,784 | Garfield... 24,355 | Marshall... 24,355 | Rice..... 14,745 |
| Bourbon... 24,712 | Geary.... 10,744 | Miami..... 21,641 | Riley..... 13,828 |
| Brown.... 22,369 | Greenwood 16,196 | Mitchell... 14,647 | Saline.... 17,076 |
| Butler.... 23,363 | Harper.... 10,310 | Montgom'y 29,039 | Sedgwick.. 44,037 |
| Chauta'qua 11,804 | Harvey.... 17,591 | Morris.... 11,967 | Shawnee... 53,727 |
| Cherokee.. 42,694 | Jackson... 17,117 | Nemaha.... 20,376 | Smith..... 16,384 |
| Clay..... 15,833 | Jefferson.. 17,533 | Neosho.... 19,254 | Sumner.... 25,631 |
| Cloud..... 18,071 | Jewell.... 19,420 | Norton.... 11,325 | Wabaunsee 12,813 |
| Coffey.... 16,643 | Johnson.. 18,104 | Osage..... 23,659 | Washing'tn 21,963 |
| Cowley.... 30,156 | Kingman.. 10,663 | Osborne... 11,844 | Wilson.... 15,621 |
| Crawford.. 38,809 | Labette.... 27,387 | Ottawa.... 11,182 | Woodson... 10,022 |
| Dickinson. 21,816 | Lea'nworth 49,940 | Phillips... 14,442 | Wyandotte 73,227 |
| Doniphan.. 15,079 | Linn..... 16,689 | | |

KENTUCKY.—Total Population, 2,147,174.

| | | | |
|--------------------|--------------------|---------------------|--------------------|
| Adair..... 14,888 | Casey..... 15,144 | Hardin.... 22,937 | McCracken 28,733 |
| Allen..... 14,657 | Christian.. 37,962 | Harrison... 18,570 | McLean... 12,448 |
| Anderson.. 10,051 | Clark..... 16,694 | Hart..... 18,390 | Madison... 25,607 |
| Ballard... 10,761 | Clay..... 15,364 | Henderson. 32,907 | Magoffin.. 12,006 |
| Barren.... 23,197 | Crittenden 15,191 | Henry.... 14,620 | Marion.... 16,290 |
| Bath..... 14,734 | Daviess... 38,667 | Hickman... 11,745 | Marshall... 13,692 |
| Bell..... 15,701 | Edmonson. 10,080 | Hopkins... 30,995 | Mason..... 20,446 |
| Boone..... 11,170 | Elliott.... 10,387 | Jackson... 10,561 | Meade..... 10,533 |
| Bourbon... 18,069 | Estill..... 11,669 | Jefferson.. 232,549 | Mercer.... 14,426 |
| Boyd..... 18,834 | Fayette.... 42,071 | Jessamine. 11,925 | Monroe.... 13,063 |
| Boyle..... 13,817 | Fleming... 17,074 | Johnson... 13,730 | Montgom'y 12,834 |
| Bracken... 12,137 | Floyd..... 15,552 | Kenton.... 63,591 | Morgan.... 12,792 |
| Breathitt. 14,322 | Franklin... 20,852 | Knox..... 17,372 | Muhlen'b'g 20,741 |
| Br'k'nridge 20,534 | Fulton.... 11,546 | Larue.... 10,764 | Nelson.... 16,587 |
| Butler.... 15,896 | Garrard... 12,042 | Laurel.... 17,592 | Nicholas... 11,952 |
| Caldwell.. 14,510 | Grant..... 13,239 | Lawrence.. 19,612 | Ohio..... 27,287 |
| Calloway.. 17,633 | Graves.... 33,204 | Lewis..... 17,868 | Owen..... 17,553 |
| Campbell.. 54,223 | Grayson... 19,878 | Lincoln... 17,059 | Pendleton. 14,947 |
| Carlisle... 10,195 | Green..... 12,255 | Livingston. 11,354 | Pike..... 22,686 |
| Carter.... 20,228 | Greenup... 15,432 | Logan..... 25,994 | Pulaski... 31,293 |

KENTUCKY.—Continued.

| | | | |
|-------------------|-------------------|------------------|-------------------|
| Rockcastle.12,416 | Taylor.....11,075 | Warren....29,970 | Webster...20,097 |
| Scott.....18,076 | Todd.....17,371 | Washingt'n14,182 | Whitley....25,015 |
| Shelby.....18,340 | Trigg.....14,073 | Wayne.....14,892 | Woodford...13,134 |
| Simpson...11,624 | Union.....21,326 | | |

LOUISIANA.—Total Population, 1,381,625.

| | | | |
|-------------------|---------------------|-------------------|--------------------|
| Acadia....23,483 | EBat'nR'ge31,153 | Natchitoc's33,216 | St. Martin .18,940 |
| Ascension..24,142 | E. Carroll..11,373 | Orleans...287,104 | St. Mary...34,145 |
| Assumpti'n21,620 | E. Feliciana 20,443 | Ouachita...20,947 | St. Tam'any13,335 |
| Avoyelles..29,701 | Grant.....12,902 | Plaquem'ns13,039 | Tangipah'a17,625 |
| Bienville..17,588 | Iberia.....29,015 | Pt. Coupee.25,777 | Tensas.....19,070 |
| Bossier....24,153 | Iberville...27,006 | Rapides....39,578 | Terrebonne24,464 |
| Caddo.....44,499 | Jefferson..15,321 | Red River..11,548 | Union.....18,520 |
| Calcasieu..30,428 | Lafayette..22,825 | Richland...11,116 | Vermilion..20,705 |
| Catahoula.16,351 | Lafourche.28,882 | Sabine.....15,421 | Vernon....10,327 |
| Claiborne..23,029 | Lincoln....15,898 | St. James..20,197 | Webster...15,125 |
| Concordia.13,559 | Madison...12,322 | S. JohnBap.12,330 | W.B'n R'ge10,285 |
| De Soto...25,063 | Morehouse.16,634 | St. Landry.52,906 | W. Felic'na15,994 |

MAINE.—Total Population, 694,466.

| | | | |
|-------------------|------------------|-------------------|-------------------|
| Androscog'54,242 | Hancock...37,241 | Oxford....32,238 | Somerset...33,849 |
| Aroostook..60,744 | Kennebec..59,117 | Penobscot.76,246 | Waldo.....24,185 |
| Cumberl'd100,689 | Knox.....30,406 | Piscataquis16,949 | Washingt'n45,232 |
| Franklin...18,444 | Lincoln...19,669 | Sagadahoc.20,330 | York.....64,885 |

MARYLAND.—Total Population, 1,190,050.

| | | | |
|-------------------|-------------------|-------------------|-------------------|
| Allegany...53,694 | Carroll....33,860 | Harford...28,269 | St. Mary...18,136 |
| AnneArun'140,018 | Cecil.....24,662 | Howard....16,715 | Somerset..25,923 |
| Baltimore..90,755 | Charles....18,316 | Kent.....18,786 | Talbot.....20,342 |
| " City.508,957 | Dorchester.27,962 | Montgom'y30,451 | Washingt'n45,133 |
| Calvert....10,223 | Frederick..51,920 | Pr. George.29,898 | Wicomico..22,852 |
| Caroline...16,248 | Garrett....17,701 | QueenAnne18,364 | Worcester.20,865 |

MASSACHUSETTS.—Total Population, 2,805,346.

| | | | |
|--------------------|-------------------|-------------------|--------------------|
| Barnstable.27,826 | Essex.....357,030 | Hampshire58,820 | Plymouth.113,985 |
| Berkshire..95,667 | Franklin...41,209 | Middlesex.565,696 | Suffolk....611,417 |
| Bristol....252,029 | Hampden.175,603 | Norfolk...151,539 | Worcester346,958 |

MICHIGAN.—Total Population, 2,420,982.

| | | | |
|-------------------|--------------------|-------------------|--------------------|
| Allegan....38,812 | Eaton.....31,668 | Kent.....129,714 | Newaygo...17,673 |
| Alpena....18,254 | Emmet.....15,931 | Lapeer....27,641 | Oakland...44,792 |
| Antrim....16,568 | Genesee....41,804 | Leelanaw..10,556 | Oceana....16,644 |
| Barry.....22,514 | Gogebic....16,738 | Lenawee...48,406 | Osceola....17,859 |
| Bay.....62,378 | G'd Trav'se20,479 | Livingston.19,664 | Ottawa....39,667 |
| Berrien...49,165 | Gratiot....29,889 | Macomb....33,244 | Saginaw...81,222 |
| Branch....27,811 | Hillsdale..29,865 | Manistee...27,856 | St. Clair...55,228 |
| Calhoun...49,315 | Houghton.66,063 | Marquette.41,239 | St. Joseph.23,889 |
| Cass.....20,876 | Huron....34,162 | Mason.....18,845 | Sanilac....35,055 |
| Charlevoix.13,956 | Ingham....39,818 | Mecosta....20,693 | Shiawassee33,866 |
| Cheboyg'n.15,516 | Ionia.....34,329 | Menominee27,046 | Tuscola....35,890 |
| Chippewa..21,338 | Iosco.....10,246 | Midland....14,439 | Van Buren.33,274 |
| Clinton...25,136 | Isabella....22,784 | Monroe....32,754 | Washtenaw47,761 |
| Delta.....23,881 | Jackson...48,222 | Montcalm..32,754 | Wayne....348,793 |
| Dickinson.17,890 | Kalamazoo44,310 | Muskegon..37,036 | Wexford...16,845 |

MINNESOTA.—Total Population, 1,751,391.

| | | | |
|------------------|-------------------|-------------------|------------------|
| Anoka.....11,313 | Blue Earth.32,263 | Carver....17,544 | Clay.....17,942 |
| Becker....14,375 | Brown.....19,787 | Chippewa..12,499 | Cottonwo'd12,069 |
| Beltrami..11,030 | Carlton....10,017 | Chisago....13,248 | Crow Wing.14,250 |

MINNESOTA.—Continued.

| | | | |
|--------------------|--------------------|--------------------|-------------------|
| Dakota.....21,733 | Lesueur.....20,234 | Olmsted...23,119 | Sibley.....16,862 |
| Dodge.....13,340 | Lyon.....14,591 | Ottertail...45,375 | Stearns....44,464 |
| Douglas...17,964 | McLeod....19,595 | Pine.....11,546 | Steele.....16,524 |
| Faribault..22,055 | Marshall...15,698 | Polk.....35,429 | Swift.....13,503 |
| Fillmore...28,238 | Martin.....16,936 | Pope.....12,577 | Todd.....22,214 |
| Freeborn..21,838 | Meeker...17,753 | Ramsey...170,554 | Wabasha..18,924 |
| Goodhue...31,137 | Morrison...22,891 | Red Lake..12,195 | Waseca...14,760 |
| Hennepin..228,340 | Mower.....22,335 | Redwood...17,261 | Washingt'n 27,808 |
| Houston...15,400 | Murray....11,911 | Renville...23,693 | Watonwan.11,496 |
| Isanti.....11,675 | Nicollet...14,774 | Rice.....26,080 | Winona...35,686 |
| Jackson...14,793 | Nobles....14,932 | St. Louis..32,932 | Wright....29,157 |
| Kandiyohi.18,416 | Norman....15,045 | Scott.....15,147 | Yel' Med'ne14,602 |
| Lac qui P'le14,289 | | | |

MISSISSIPPI.—Total Population, 1,551,270.

| | | | |
|-------------------|-------------------|-------------------|-------------------|
| Adams.....30,111 | Grenada...14,112 | Lincoln...21,552 | Sharkey....12,178 |
| Alcorn.....14,987 | Hancock...11,886 | Lowndes...29,095 | Simpson....12,800 |
| Amite.....20,708 | Harrison...21,002 | Madison...32,493 | Smith.....13,055 |
| Attala.....26,248 | Hinds.....52,577 | Marion....13,501 | Sunflower..16,084 |
| Benton.....10,510 | Holmes....36,828 | Marshall...27,674 | Tallahat'e.19,600 |
| Bolivar...35,427 | Issaquena..10,400 | Monroe...31,216 | Tate.....20,618 |
| Calhoun...16,512 | Itawamba..13,544 | Montgom'y 16,536 | Tippah....12,983 |
| Carroll....22,116 | Jackson...16,513 | Neshoba...12,726 | Tishomingo10,124 |
| Chickasaw.19,892 | Jasper...15,394 | Newton...19,708 | Tunica.....16,479 |
| Choctaw...13,036 | Jefferson..21,292 | Noxubee...30,846 | Union.....16,522 |
| Claiborne..20,787 | Jones.....17,846 | Oktibbeha.20,183 | Warren....40,912 |
| Clarke.....17,741 | Kemper....20,492 | Panola....29,027 | Washing'n.49,216 |
| Clay.....19,563 | Lafayette..22,110 | Perry.....14,682 | Wayne.....12,539 |
| Coahoma...26,293 | Lauderdale38,150 | Pike.....27,545 | Webster...13,619 |
| Copiah....34,395 | Lawrence..15,103 | Pontotoc..18,274 | Wilkinson..21,453 |
| Covington..13,076 | Leake.....17,360 | Prentiss...15,788 | Winston...14,124 |
| De Soto....24,751 | Lee.....21,956 | Rankin....20,955 | Yalobusha.19,742 |
| Franklin...13,678 | Leflore....23,834 | Scott.....14,316 | Yazoo.....43,948 |

MISSOURI.—Total Population, 3,106,665.

| | | | |
|--------------------|-------------------|--------------------|---------------------|
| Adair.....21,728 | Clinton....17,363 | Jefferson...25,712 | Oregon.....13,906 |
| Andrew....17,332 | Cole.....20,578 | Johnson...27,843 | Osage.....14,096 |
| Atchison...16,501 | Cooper...22,532 | Knox.....13,479 | Ozark.....12,145 |
| Audrain...21,160 | Crawford...12,959 | Laclede...16,523 | Pemiscot...12,115 |
| Barry.....25,532 | Dade.....18,125 | Lafayette..31,679 | Perry.....15,134 |
| Barton....18,253 | Dallas....13,903 | Lawrence...31,662 | Pettis.....32,438 |
| Bates.....30,141 | Daviess...21,325 | Lewis.....16,724 | Phelps.....14,194 |
| Benton....16,556 | Dekalb....14,418 | Lincoln...18,352 | Pike.....25,744 |
| Bollinger..14,650 | Dent.....12,986 | Linn.....25,503 | Platte.....16,193 |
| Boone.....28,642 | Douglas...16,802 | Livingston.22,302 | Polk.....23,255 |
| Buchanan.121,838 | Dunklin...21,706 | McDonald..13,574 | Pulaski....10,394 |
| Butler....16,769 | Franklin...30,581 | Macon.....33,018 | Putnam....16,688 |
| Caldwell...16,656 | Gasconade.12,298 | Marion....26,331 | Ralls.....12,287 |
| Callaway..25,984 | Gentry....20,554 | Mercer....14,706 | Randolph..24,442 |
| Camden....13,113 | Greene....52,713 | Miller.....15,187 | Ray.....24,805 |
| C'e Gir'de'u24,315 | Grundy...17,832 | Mississippi.11,837 | Ripley.....13,186 |
| Carroll....26,445 | Harrison...24,398 | Moniteau..15,931 | St. Charles.24,474 |
| Cass.....23,636 | Henry....28,054 | Monroe....19,716 | St. Clair...17,907 |
| Cedar.....16,923 | Holt.....17,083 | Montgom'y 16,571 | Ste. Gen'v'e.10,359 |
| Chariton..26,826 | Howard....18,337 | Morgan....12,175 | St. Fr'ncois24,051 |
| Christian..16,939 | Howell....21,834 | N'w Madrid.11,280 | St. Louis...50,040 |
| Clark.....15,383 | Jackson...195,193 | Newton...27,001 | " " City575,238 |
| Clay.....18,903 | Jasper....84,018 | Nodaway...32,938 | Saline.....33,703 |

MISSOURI.—Continued.

| | | | |
|-------------------|-------------------|------------------|------------------|
| Schuyler...10,840 | Shelby....16,167 | Texas.....22,192 | Wayne.....15,309 |
| Scotland...13,232 | Stoddard..24,669 | Vernon....31,619 | Webster...16,640 |
| Scott.....13,092 | Sullivan...20,282 | Washingt'n14,263 | Wright....17,519 |
| Shannon...11,247 | Taney.....10,127 | | |

MONTANA.—Total Population, 243,329.

| | | | |
|------------------|-------------------|-------------------|-------------------|
| Cascade...25,777 | Deerlodge..17,393 | Missoula...13,964 | Silverbow..47,635 |
| Choteau...10,966 | Le'is&Cl'ke19,171 | | |

NEBRASKA.—Total Population, 1,068,539.

| | | | |
|-------------------|-------------------|-------------------|-------------------|
| Adams....18,840 | Custer.....19,758 | Howard...10,343 | Phelps.....10,772 |
| Antelope...11,344 | Dawson....12,214 | Jefferson..15,196 | Platte.....17,747 |
| Boone.....11,689 | Dixon.....10,535 | Johnson...11,197 | Polk.....10,542 |
| Buffalo....20,254 | Dodge.....22,298 | Knox.....14,343 | Richardson19,614 |
| Burt.....13,040 | Douglas...140,590 | Lancaster..64,835 | Saline.....18,252 |
| Butler.....15,703 | Fillmore...15,087 | Lincoln....11,416 | Saunders..22,085 |
| Cass.....21,330 | Furnas....12,373 | Madison...16,976 | Seward....15,690 |
| Cedar.....12,467 | Gage.....30,051 | Nemaha....14,952 | Thayer....14,325 |
| Clay.....15,735 | Hall.....17,206 | Nuckolls...12,414 | Washingt'n13,086 |
| Colfax.....11,211 | Hamilton..13,330 | Otoe.....22,288 | Webster...11,619 |
| Cuming....14,584 | Holt.....12,224 | Pawnee....11,770 | York.....18,205 |

NEVADA.—Total Population, 42,335.

NEW HAMPSHIRE.—Total Population, 411,588.

| | | | |
|-------------------|--------------------|------------------|-------------------|
| Belknap...19,526 | Coos.....29,468 | Merrimack.52,430 | Strafford..39,337 |
| Carroll....16,895 | Grafton...40,844 | Ro'kingh'm51,118 | Sullivan...18,009 |
| Cheshire...31,321 | Hillsboro..112,640 | | |

NEW JERSEY.—Total Population, 1,883,669.

| | | | |
|-------------------|-------------------|-------------------|------------------|
| Atlantic...46,402 | Essex.....359,053 | Middlesex..79,762 | Salem.....25,530 |
| Bergen....78,441 | Gloucester.31,905 | Monmouth.82,057 | Somerset..32,948 |
| Burlington.58,241 | Hudson....386,048 | Morris....65,156 | Sussex....24,134 |
| Camden...107,643 | Hunterdon.34,507 | Ocean.....19,747 | Union.....99,353 |
| Cape May..13,201 | Mercer.....95,365 | Passaic...155,202 | Warren....37,781 |
| Cumberl'd..51,193 | | | |

NEW MEXICO.—Total Population, 195,310.

| | | | |
|--------------------|-------------------|-------------------|-------------------|
| Bernalillo..28,630 | Grant.....12,883 | San Miguel22,053 | Taos.....10,889 |
| Colfax.....10,150 | Mora.....10,304 | Santa Fe...14,658 | Valencia...13,895 |
| Donna Ana10,187 | Rio Arriba.13,777 | Socorro....12,195 | |

NEW YORK.—Total Population, 7,268,012.

| | | | |
|-------------------|-------------------|-------------------|-------------------|
| Albany...165,571 | Franklin...42,853 | Oneida...132,800 | Schoharie..26,854 |
| Allegany...41,501 | Fulton....42,842 | Onondaga168,735 | Schuyler...15,811 |
| Broome....69,149 | Genesee...31,561 | Ontario....49,605 | Seneca....28,114 |
| Catt'raug's65,643 | Greene....31,478 | Orange....103,859 | Steuben...82,822 |
| Cayuga....66,234 | Herkimer..51,049 | Orleans...30,164 | Suffolk...77,582 |
| Chatauqua88,314 | Jefferson..76,748 | Oswego....70,881 | Sullivan...32,306 |
| Chemung...54,063 | Kings....166,582 | Otsego....48,939 | Tioga.....27,951 |
| Chenango..36,568 | Lewis.....27,427 | Putnam....13,787 | Tompkins..33,830 |
| Clinton...47,430 | Livingston.37,059 | Queens...152,999 | Ulster.....88,422 |
| Columbia..43,211 | Madison...40,545 | Rensselaer121,697 | Warren...29,943 |
| Cortland..27,576 | Monroe...217,854 | Richmond..67,021 | Washingt'n45,624 |
| Delaware..46,413 | Montgom'y47,488 | Rockland..38,298 | Wayne....48,660 |
| Dutchess...81,670 | Nassau....55,448 | St. Lawr'ce89,083 | Westch's'r183,375 |
| Erie.....433,686 | N. York.2,050,600 | Saratoga...61,089 | Wyoming...30,413 |
| Essex.....30,707 | Niagara....74,961 | Schenect'y.46,852 | Yates.....20,318 |

NORTH CAROLINA.—Total Population, 1,893,810.

| | | | |
|-------------------|-------------------|--------------------|-------------------|
| Alamance..25,665 | Cumberl'd..29,249 | Lenoir18,639 | Richmond ..28,408 |
| Alexander..10,960 | Davidson ..23,403 | Lincoln15,498 | Robeson...40,371 |
| Anson.....21,870 | Davie12,115 | McDowell...12,567 | Ro'kingh'm33,163 |
| Ashe.....19,581 | Duplin.....22,405 | Macon12,104 | Rowan....31,066 |
| Beaufort...26,404 | Durham ...26,233 | Madison ...20,644 | Rutherford25,101 |
| Bertie.....20,538 | Edgecombe26,591 | Martin15,383 | Sampson...26,340 |
| Bladen.....17,677 | Forsyth....35,261 | Mecklenb'g55,268 | Stanly15,220 |
| Brunswick.12,657 | Franklin...25,116 | Mitchell....15,221 | Stokes...19,866 |
| Buncombe.44,288 | Gaston....27,903 | Montgom'y14,197 | Surry.....25,515 |
| Burke.....17,699 | Gates10,413 | Moore23,622 | Union.....27,156 |
| Cabarrus...22,456 | Granville..23,263 | Nash.....25,478 | Vance.....16,684 |
| Caldwell...15,694 | Greene12,038 | N.Hanover.25,785 | Wake.....54,626 |
| Carteret...11,811 | Guilford...39,074 | North'pton.21,150 | Warren....19,151 |
| Caswell ..15,028 | Halifax...30,793 | Onslow....11,940 | Washingt'n10,608 |
| Catawba...22,133 | Harnett....15,988 | Orange14,690 | Watauga...13,417 |
| Chatham...23,912 | Haywood...16,222 | Pasquotank13,660 | Wayne....31,356 |
| Cherokee...11,860 | Henderson.14,104 | Pender.....13,381 | Wilkes....26,872 |
| Chowan....10,258 | Hertford...14,294 | Perquim'ns10,091 | Wilson....23,596 |
| Cleveland..25,078 | Iredell....29,064 | Person.....16,685 | Yadkin....14,083 |
| Columbus..21,274 | Jackson....11,853 | Pitt30,889 | Yancey....11,464 |
| Craven24,160 | Johnston..32,250 | Randolph...28,232 | |

NORTH DAKOTA.—Total Population, 319,146.

| | | | |
|-------------------|-------------------|-------------------|--------------------|
| Barnes13,159 | Cavalier ..12,580 | Pembina...17,869 | Traill13,107 |
| Cass.....28,625 | Gr'd Forks.24,459 | Richland...17,387 | Walsh20,288 |

OHIO.—Total Population, 4,157,545.

| | | | |
|-------------------|--------------------|--------------------|--------------------|
| Adams.....26,328 | Fairfield...34,259 | Licking47,070 | Portage....29,246 |
| Allen47,976 | Fayette....21,725 | Logan30,420 | Preble23,713 |
| Ashland...21,184 | Franklin...164,460 | Lorain.....54,857 | Putnam....32,525 |
| Ashtabula.51,448 | Fulton.....22,801 | Lucas.....153,559 | Richland...44,289 |
| Athens38,730 | Gallia.....27,918 | Madison ...20,590 | Ross.....40,940 |
| Auglaize...31,192 | Geauga14,744 | Mahoning..70,134 | Sandusky..34,311 |
| Belmont...60,875 | Greene.....31,613 | Marion....28,678 | Scioto40,981 |
| Brown.....28,237 | Guernsey..34,425 | Medina21,958 | Seneca.....41,163 |
| Butler.....56,870 | Hamilton.409,479 | Meigs.....28,620 | Shelby24,625 |
| Carroll....16,811 | Hancock...41,995 | Mercer.....28,021 | Stark94,747 |
| Champaign26,642 | Hardin31,187 | Miami.....43,105 | Summit....71,715 |
| Clark58,939 | Harrison...20,486 | Monroe27,031 | Trumbull..46,591 |
| Clermont...31,610 | Henry27,282 | Montgm'y130,146 | Tuscaraw's53,751 |
| Clinton....24,202 | Highland..30,982 | Morgan....17,905 | Union.....22,342 |
| Columbi'na68,590 | Hocking...24,398 | Morrow....17,879 | Van Wert..30,394 |
| Coshocton.29,337 | Holmes19,511 | Muskingum53,185 | Vinton....15,330 |
| Crawford..33,915 | Huron32,330 | Noble19,466 | Warren....25,584 |
| Cuyahoga439,120 | Jackson...34,248 | Ottawa22,213 | Washing'n48,245 |
| Darke.....42,532 | Jefferson..44,357 | Paulding...27,528 | Wayne....37,870 |
| Defiance...26,387 | Knox27,768 | Perry31,841 | Williams..24,953 |
| Delaware..26,401 | Lake.....21,680 | Pickaway..27,016 | Wood51,555 |
| Erie.....37,650 | Lawrence..39,534 | Pike18,172 | Wyandot..21,125 |

OKLAHOMA.—Total Population, 398,245.

| | | | |
|--------------------|-------------------|-------------------|-------------------|
| Blaine10,658 | Grant17,273 | Logan26,538 | Payne20,909 |
| Canadian..15,981 | Greer17,922 | Noble14,015 | Pottawat'e.26,412 |
| Cleveland..16,388 | Kay.....22,530 | Oklahoma.25,854 | Washita...15,001 |
| Custer.....12,264 | Kingfisher.18,501 | Pawnee....12,366 | Woods.....34,975 |
| Garfield...22,076 | Lincoln ...27,007 | | |

TWELFTH CENSUS OF THE UNITED STATES. 111

OREGON.—Total Population, 413,536.

| | | | |
|-------------------|------------------|-------------------|-------------------|
| Baker.....15,597 | Douglas...14,565 | Marion.....27,713 | Wasco.....13,199 |
| Clackamas 19,658 | Jackson...13,698 | Multno'ah 103,167 | Washing'n. 14,467 |
| Clatsop....12,765 | Lane.....19,604 | Umatilla...18,049 | Yamhill...13,420 |
| Coos.....10,324 | Linn.....18,603 | Union.....16,070 | |

PENNSYLVANIA.—Total Population, 6,302,115.

| | | | |
|--------------------|-------------------|--------------------|--------------------|
| Adams....34,496 | Clinton...29,197 | Lackaw'a. 193,831 | Phila....1,293,697 |
| A legh'ny. 775,058 | Columbia..39,896 | Lancaster. 159,241 | Potter.....30,621 |
| Armstrong. 52,551 | Crawford..63,643 | Lawrence..57,042 | Schuylkill 172,927 |
| Beaver....56,432 | Cumberl'd. 50,344 | Lebanon...53,827 | Snyder....17,304 |
| Bedford...39,468 | Dauphin...114,443 | Lehigh....93,893 | Somerset..49,461 |
| Berks.....159,615 | Delaware..94,762 | Luzerne...257,121 | Sullivan...12,134 |
| Blair.....85,099 | Elk.....32,903 | Lycoming..75,663 | Susqueh'na 40,043 |
| Bradford..59,403 | Erie.....98,473 | McKean...51,343 | Tioga.....49,086 |
| Bucks.....71,190 | Fayette...110,412 | Mercer....57,387 | Union.....17,592 |
| Butler....56,962 | Forest....11,039 | Mifflin....23,160 | Venango...49,648 |
| Cambria...104,837 | Franklin...54,902 | Monroe...21,161 | Warren...38,946 |
| Carbon....44,510 | Greene....28,281 | Montgo'ry 138,995 | Washing'n. 92,181 |
| Center....42,894 | Huntingl'd 34,650 | Montour...15,526 | Wayne....30,171 |
| Chester....95,695 | Indiana...42,556 | North'pton 99,687 | Westm'l'd 160,175 |
| Clarion...34,283 | Jefferson..59,113 | North'b'l'd 90,911 | Wyoming...17,152 |
| Clearfield..80,614 | Juniata....16,054 | Perry.....26,263 | York.....116,413 |

RHODE ISLAND.—Total Population, 428,556.

| | | | |
|--------------------|------------------|--------------------|-------------------|
| Bristol.....13,144 | Newport...32,599 | Provid'nce 328,683 | Washing'n. 24,154 |
| Kent.....29,976 | | | |

SOUTH CAROLINA.—Total Population, 1,340,316.

| | | | |
|--------------------|---------------------|-------------------|--------------------|
| Abbeville..33,400 | Chesterfi'd. 20,401 | Greenwood. 28,343 | Oconee....23,634 |
| Aiken.....39,032 | Clarendon..28,184 | Hampton...23,738 | Orangeb'g. 59,663 |
| Anderson..55,728 | Colleton...33,452 | Horry.....23,364 | Pickens...19,375 |
| Bamberg...17,296 | Darlington. 32,388 | Kershaw...24,696 | Richland..45,589 |
| Barnwell...35,504 | Dorchester. 16,294 | Lancaster..24,311 | Saluda....18,966 |
| Beaufort...35,495 | Edgefield..25,478 | Laurens...37,382 | Spartanb'g 65,560 |
| Berkeley...30,454 | Fairfield...29,425 | Lexington..27,264 | Sumter....51,237 |
| Charleston. 88,006 | Florence...28,474 | Marion.....35,181 | Union.....25,501 |
| Cherokee...21,359 | Georgeto'n. 22,846 | Marlboro..27,639 | Willi'msb'g 31,635 |
| Chester....28,616 | Greenville..53,490 | Newberry...30,182 | York.....41,684 |

SOUTH DAKOTA.—Total Population, 401,570.

| | | | |
|-------------------|-------------------|-------------------|------------------|
| Bonhomme 10,379 | Day.....12,254 | Lincoln...12,161 | Turner....13,175 |
| Brookings..12,561 | Hutchinson 11,897 | Minnehaha 23,926 | Union.....11,153 |
| Brown.....15,286 | Lawrence..17,897 | Roberts....12,216 | Yankton...12,649 |

TENNESSEE.—Total Population, 2,020,616.

| | | | |
|-------------------|-------------------|--------------------|-------------------|
| Anderson..17,634 | Crockett...15,867 | Hamilton...61,695 | Knox.....74,302 |
| Bedford...23,845 | Davidson..122,815 | Hancock...11,147 | Lauderdale 21,971 |
| Benton....11,888 | Decatur....10,439 | Hardeman. 22,976 | Lawrence..15,402 |
| Blount....19,206 | Dekalb....16,460 | Hardin....19,246 | Lincoln...26,304 |
| Bradley...45,759 | Dickson...18,635 | Hawkins...24,267 | Loudon....10,838 |
| Campbell..17,317 | Dyer.....23,776 | Haywood...25,189 | McMinn....19,163 |
| Cannon....12,121 | Fayette...29,701 | Henderson. 18,117 | McNairy...17,760 |
| Carroll....24,250 | Franklin...20,392 | Henry.....24,208 | Macon.....12,881 |
| Carter.....16,688 | Gibson....39,408 | Hickman...16,367 | Madison...36,333 |
| Cheatham..10,112 | Giles.....33,035 | Humphr'ys 13,398 | Marion....17,281 |
| Claiborne..20,696 | Grainger...15,512 | Jackson...15,039 | Marshall...18,763 |
| Cocke.....19,153 | Greene....30,596 | Jefferson...18,590 | Maury.....42,703 |
| Coffee.....15,574 | Hamblen...12,728 | Johnson...10,589 | Monroe....18,585 |

TENNESSEE.—Continued.

| | | | |
|-----------------------|------------------------|------------------------|------------------------|
| Montgo'ry .36,017 | Robertson .25,029 | Stewart . . .15,224 | Washing'n.22,604 |
| Obion28,286 | Rutherford 33,543 | Sullivan . . .24,935 | Wayne12,936 |
| Overton . . .13,353 | Scott11,077 | Sumner . . .26,072 | Weakley . . .32,546 |
| Polk11,357 | Sevier22,021 | Tipton29,273 | White14,157 |
| Putnam . . .16,890 | Shelby . . .153,557 | Union12,894 | Williamson.26,429 |
| Rhea14,318 | Smith19,026 | Warren . . .16,410 | Wilson27,078 |
| Roane22,738 | | | |

TEXAS.—Total Population, 3,048,710.

| | | | |
|-----------------------|-----------------------|-----------------------|------------------------|
| Anderson . .28,015 | Denton . . .28,318 | Hunt47,295 | Robertson .31,480 |
| Angelina . .13,481 | Dewitt . . .21,311 | Jack10,224 | Rusk26,099 |
| Austin20,676 | Eastland . .17,971 | Jefferson . .14,239 | San Jacinto10,277 |
| Bastrop . . .26,845 | Ellis50,059 | Johnson . .33,819 | Shelby20,452 |
| Bell45,535 | El Paso . . .24,886 | Kaufman . .33,376 | Smith37,370 |
| Bexar69,422 | Erath29,966 | Lamar48,627 | Starr11,469 |
| Bosque . . .17,390 | Falls33,342 | Lavaca . . .28,121 | Tarrant . . .52,376 |
| Bowle26,676 | Fannin . . .51,793 | Lee14,595 | Taylor . . .10,499 |
| Brazoria . .14,861 | Fayette . . .36,542 | Leon18,072 | Titus12,292 |
| Brazos . . .18,859 | Fort Bend .16,538 | Limestone.32,573 | Travis47,386 |
| Brown16,019 | Freestone .18,910 | McLennan .59,772 | Trinity . . .10,976 |
| Burleson . .18,367 | Galveston .44,116 | Madison . .10,432 | Tyler11,899 |
| Burnet . . .10,528 | Gonzales . .28,882 | Marion . . .10,754 | Upshur . . .16,266 |
| Caldwell . .21,765 | Grayson . .63,661 | Milam39,666 | Van Zandt.25,481 |
| Cameron . .16,095 | Gregg12,343 | Montague .24,800 | Victoria . . .13,678 |
| Cass22,841 | Grimes . . .26,106 | Montgom'y17,067 | Walker . . .15,813 |
| Cherokee . .25,154 | Guadalupe.21,385 | Nacogdo's .24,663 | Waller14,246 |
| Coleman . .10,077 | Hamilton . .13,520 | Navarro . . .43,374 | Washing'n.32,931 |
| Collin50,087 | Harris63,786 | Nueces . . .10,439 | Webb21,851 |
| Colorado . .22,203 | Harrison . .31,878 | Palo Pinto .12,291 | Wharton . .16,942 |
| Comanche .23,009 | Hays14,142 | Panola21,404 | Williamson38,072 |
| Cooke27,494 | Henderson.19,970 | Parker25,823 | Wilson13,961 |
| Coryell . . .21,308 | Hill41,355 | Polk14,447 | Wise27,116 |
| Dallas82,726 | Hopkins . .27,950 | Red River .29,893 | Wood21,048 |
| Delta15,249 | Houston . .25,452 | | |

UTAH.—Total Population, 276,749.

| | | | |
|-----------------------|----------------------|----------------------|-----------------------|
| Boxelder . .10,009 | Juab10,082 | Sanpete . . .16,313 | Weber25,239 |
| Cache18,139 | Salt Lake .77,725 | Utah32,456 | |

VERMONT.—Total Population, 343,641.

| | | | |
|---------------------|--------------------|---------------------|---------------------|
| Addison . .21,912 | Chittenden.39,600 | Orange . . .19,313 | Washing'n.36,607 |
| Bennington21,705 | Franklin . .30,198 | Orleans . . .22,024 | Windham . .26,660 |
| Caledonia . .24,381 | Lamoille . .12,289 | Rutland . . .44,209 | Windsor . . .32,225 |

VIRGINIA.—Total Population, 1,854,184.

| | | | |
|-----------------------|-----------------------|-----------------------|------------------------|
| Accomac . . .32,570 | Charlotte . .15,343 | Grayson . . .16,853 | Montgom'y15,852 |
| Albemarle .28,473 | Chesterfi'd.18,804 | Halifax . . .37,197 | Nansemo'd.23,078 |
| Alleghany .16,330 | Culpeper . .14,123 | Hanover . . .17,618 | Nelson16,075 |
| Amherst . . .17,864 | Dinwiddie .15,374 | Henrico . . .30,062 | Norfolk . . .50,780 |
| Augusta . . .32,370 | Eliz'b'h C'y19,460 | Henry19,265 | North'pton.13,770 |
| Bedford . . .30,356 | Fairfax . . .18,540 | I. of Wight.13,102 | Nottoway . .12,366 |
| Botetourt . .17,161 | Fauquier . .23,374 | Lee19,856 | Orange12,571 |
| Brunswick.18,217 | Floyd15,388 | Loudoun . . .21,948 | Page13,794 |
| Bucking'm.15,266 | Franklin . .25,953 | Louisa16,517 | Patrick . . .15,403 |
| Campbell . .23,256 | Frederick . .13,239 | Lunenburg.11,705 | Pittsylv'ia46,894 |
| Caroline . . .16,709 | Giles10,793 | Madison . . .10,216 | P'ce Edw'd.15,045 |
| Carroll19,303 | Gloucester .12,832 | Mecklenb'g26,551 | Pr'ess Anne11,192 |

VIRGINIA.—*Continued.*

| | | | |
|-------------------|--------------------|-------------------|-------------------|
| P'ceWilli'm11,112 | Shenand'h...20,253 | Wythe.....20,437 | City of— |
| Pulaski....14,609 | Smyth.....17,121 | City of— | Norfolk...46,624 |
| Roanoke...15,837 | South'pton.22,848 | Alexand'a.14,528 | Petersb'g..21,810 |
| Rockbridge21,799 | Sussex.....12,082 | Danville...16,520 | Portsm'th.17,427 |
| Rocking'm.33,527 | Tazewell...23,384 | Lynchb'g..18,891 | Richmond 85,050 |
| Russell....18,031 | Washing'n.28,995 | N'pt.News19,635 | Roanoke...21,495 |
| Scott22,694 | Wise.....19,653 | | |

WASHINGTON.—Total Population, 518,103.

| | | | |
|-------------------|-------------------|-------------------|------------------|
| Chehalis...15,124 | Lincoln....11,969 | Spokane...57,542 | Whatcom...24,116 |
| Clarke.....13,419 | Pierce.....55,515 | Stevens....10,543 | Whitman...25,360 |
| King.....110,053 | Skagit.....14,272 | Wallawalla.18,680 | Yakima....13,462 |
| Lewis.....15,157 | Snohomish.23,950 | | |

WEST VIRGINIA.—Total Population, 958,800.

| | | | |
|-------------------|--------------------|-------------------|------------------|
| Barbour....14,198 | Jackson....22,987 | Mingo.....11,359 | Roane.....19,852 |
| Berkeley...19,469 | Jefferson...15,935 | Monongalia19,049 | Summers...16,265 |
| Braxton...18,904 | Kanawha...54,696 | Monroe....13,130 | Taylor....14,978 |
| Cabell....29,252 | Lewis.....16,980 | Nicholas...11,403 | Tucker....13,433 |
| Calhoun...10,266 | Lincoln....15,434 | Ohio.....48,024 | Tyler.....18,252 |
| Doddridge.13,689 | McDowell..18,747 | Preston....22,727 | Upshur....14,696 |
| Fayette....31,987 | Marion....32,430 | Putnam....17,330 | Wayne....23,619 |
| Gilmer....11,762 | Marshall..26,444 | Raleigh...12,436 | Wetzel...22,880 |
| Greenbrier.20,683 | Mason.....24,142 | Randolph..17,670 | Wirt.....10,284 |
| Hampshire.11,806 | Mercer....23,023 | Ritchie...18,901 | Wood...34,452 |
| Harrison...27,690 | Mineral....12,883 | | |

WISCONSIN.—Total Population, 2,069,042.

| | | | |
|-------------------|-------------------|-------------------|--------------------|
| Ashland....20,176 | Eau Claire.31,692 | Manitowoc.42,261 | St. Croix...26,830 |
| Barron....23,677 | Fo'd du Lac47,589 | Marathon..43,256 | Sauk.....33,006 |
| Bayfield...14,392 | Grant.....38,881 | Marquette..30,822 | Shawano...27,475 |
| Brown....46,359 | Green.....22,719 | Marquette..10,509 | Sheboygan.50,345 |
| Buffalo....16,765 | Green Lake15,797 | Milwa'kee.330,017 | Taylor...11,262 |
| Calumet...17,078 | Iowa.....23,114 | Monroe....28,103 | Trempeal'u23,114 |
| Chippewa...33,037 | Jackson...17,466 | Oconto....20,874 | Vernon....28,351 |
| Clark.....25,848 | Jefferson..34,789 | Outagamie.46,247 | Walworth..29,259 |
| Columbia..31,121 | Juneau....20,629 | Ozaukee...16,363 | Washingt'n23,589 |
| Crawford..17,286 | Kenosha...21,707 | Pierce.....23,943 | Waukesha..35,229 |
| Dane.....69,435 | Kewaunee.17,212 | Polk.....17,801 | Waupaca..31,615 |
| Dodge.....46,631 | La Crosse..42,997 | Portage...29,483 | Wausara...15,972 |
| Door.....17,583 | Lafayette..20,959 | Racine....45,644 | Winnebago.58,225 |
| Douglas...36,335 | Langlade..12,553 | Richland...19,483 | Wood.....25,865 |
| Dunn.....25,043 | Lincoln....16,269 | Rock.....51,203 | |

WYOMING.—Total Population, 92,531.

| | | |
|-------------------|--------------------|------------------|
| Albany.....13,084 | Laramie.....20,181 | Uinta.....12,223 |
|-------------------|--------------------|------------------|

ALASKA.—Total Population, 63,441.

| | |
|------------------------------|------------------------------|
| Northern district.....30,578 | Southern district.....32,863 |
|------------------------------|------------------------------|

HAWAII.—Total Population, 154,001.

| | | | |
|---------------------------|-----------------------------------|---------------------------|-------------------------|
| Island of Hawaii...46,843 | Islands of Kauai & Niihau..20,734 | Island of Maui.....25,416 | Island of Oahu...58,504 |
|---------------------------|-----------------------------------|---------------------------|-------------------------|

INDIAN TERRITORY.—Total Population, 391,960.

| | | | |
|---------------------------|----------------------------|--------------------------|------------------------|
| Cherokee nation...101,754 | Chickasaw nation...139,260 | Choctaw nation....99,681 | Creek nation....40,674 |
|---------------------------|----------------------------|--------------------------|------------------------|

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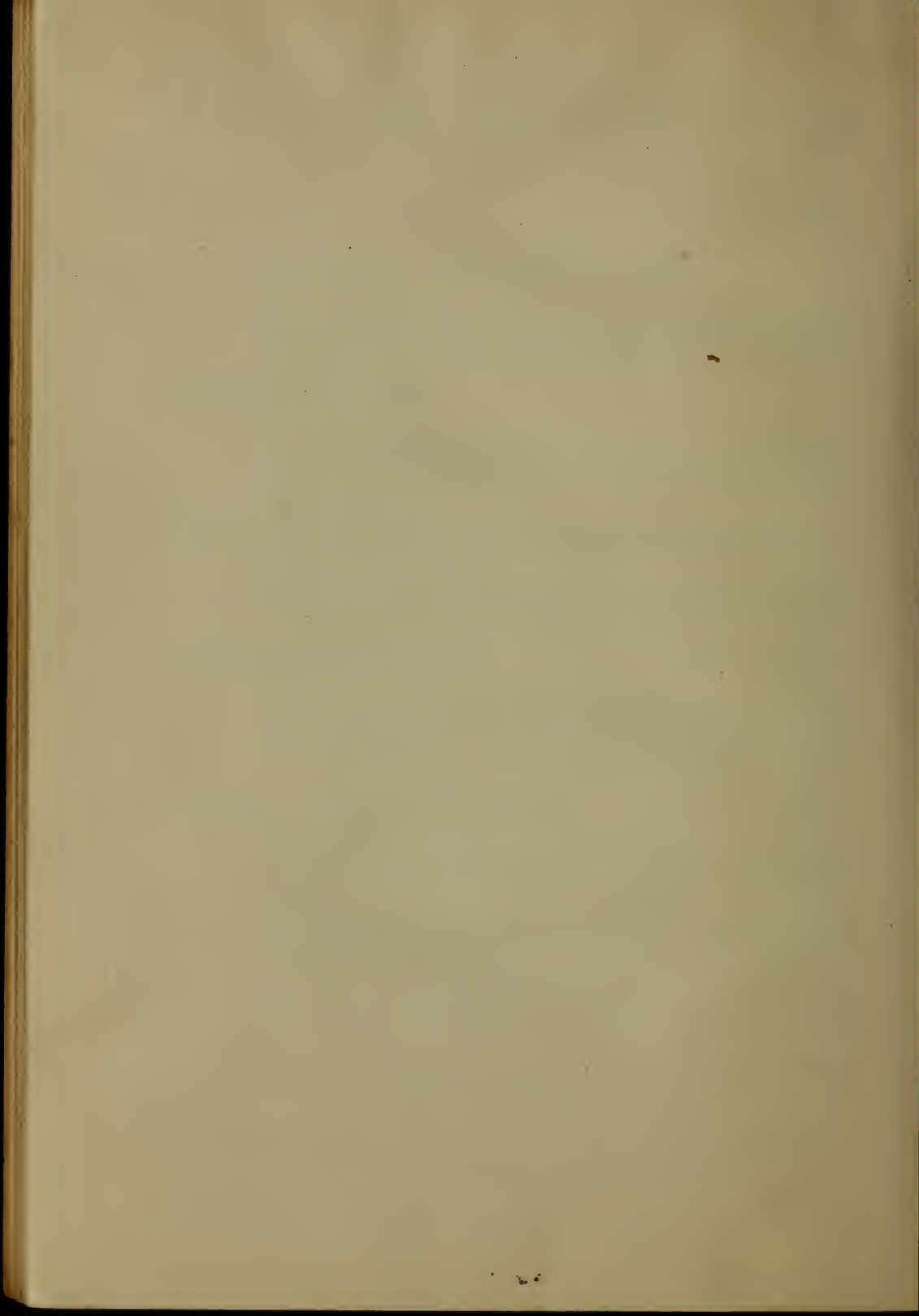
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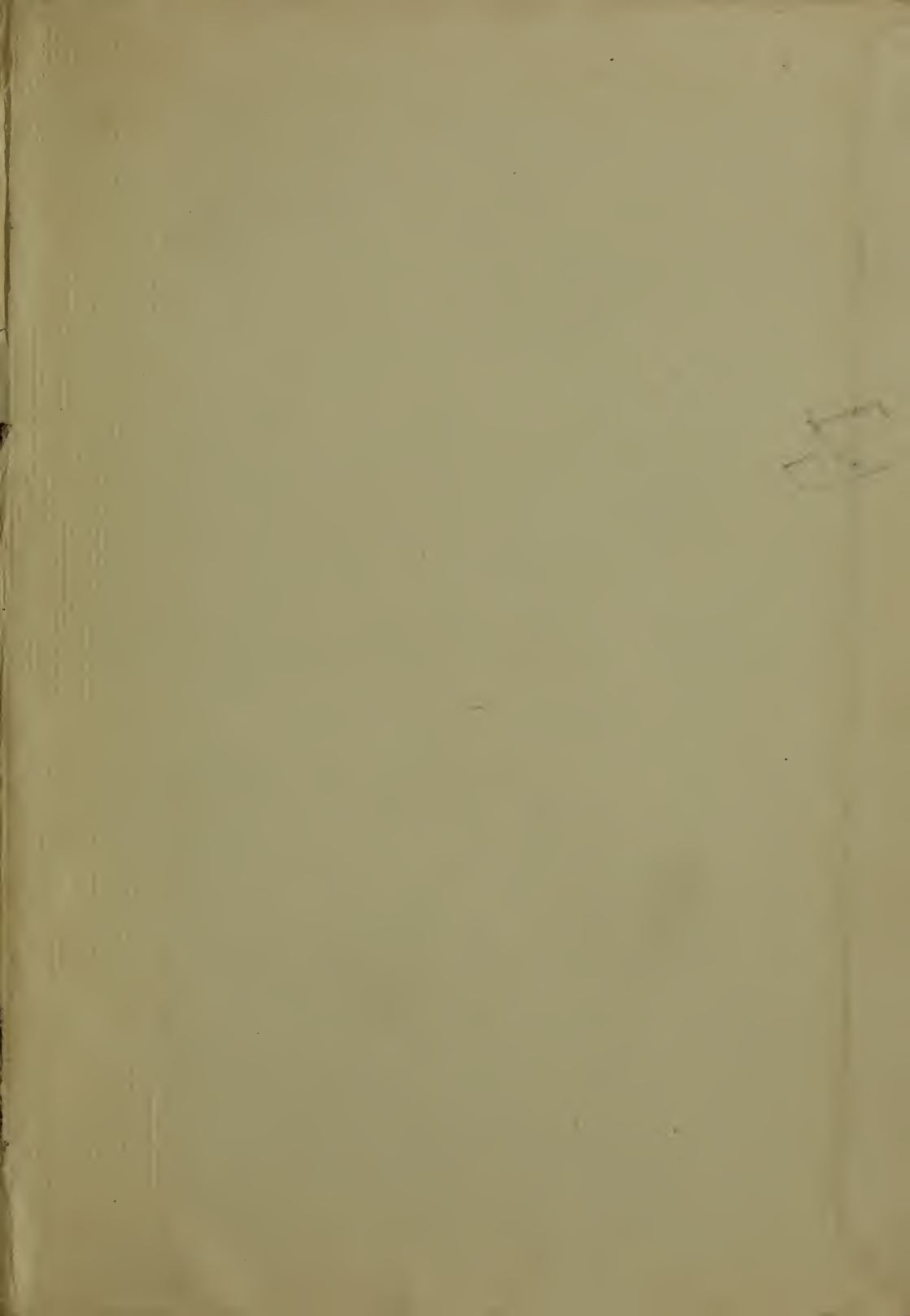
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